Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

Vol. XII, No. 11 | SEPTEMBER, 1936 | $2.00 a Year

Contents of this Issue

Letters from Readers of "Industrial Finishing" 5
Design and Color in Streamlined Train 8
Automatic Dip Finishing and Drying Machine 12
Buffing Furniture Finishes 19
Spray Equipment for Synthetic Materials 28
Photographic Method of Making Silk Screen Stencils—II 32
Use the Proper Solvents 42
Questions; Answers 45
What's New 53
Editorial 62

New Soft Texture Flock 11
Color and Decoration on Housewares 16
Kelsan Products Moves Plant 16
Industrial Equipment Catalog 26
V. J. Dolan & Co. Adds Men to Organization 26
Schaefer Varnish Co. Occupies Larger Plant 26
Plant Expansion of Detroit Rex Products 30
Spray Equipment to Your Door 30
Metal Office Furniture 40
Albert J. Ferbert Dies 44
Cleans Painted Surfaces 44
Paint Brush Catalog 50
Silk-Screen-Supplies Catalog 59
Lindol Prices Raised 64
Finishing Room Fires 65

"Classified Advertising" Section 66
Advertisers' Index 67

Published by

Practical Publications, Inc., 222 East Ohio St., Indianapolis, Indiana

Eastern Office: C. A. Larson, Mgr., 254 West 31st Street, New York City; Phone, Penna. 6-9049

DeVILBISS EQUIPMENT

MORE PROOF

Spray-Finishes for THE COLUMBIA MILLS, INC. . .

It is particularly important that the finishes on Venetian Blinds be beautiful and lasting. Old-fashioned methods are out of place in the finishing of this modern product . . . Columbia Mills use DeVilbiss Spray-Finishing Equipment; find that it produces finishes of highest quality, and that it operates with speed, dependability and economy . . . For the solution of your finishing problems, it will pay you to investigate the modern, improved line of DeVilbiss Spray-Finishing and Exhaust Equipment.

THE DEVILBISS COMPANY · TOLEDO · OHIO

New York Philadelphia Cleveland Detroit Chicago St. Louis San Francisco Windsor, Ontario

Direct sales and service representatives available everywhere

DeVilbiss

Kindly mention INDUSTRIAL FINISHING when writing advertisers

Letters from Readers of "Industrial Finishing"

Editor's Note — These letters have been promptly answered and all of the inquiries have been referred to advertisers in the magazine. They are published here to indicate or suggest certain interesting trends of thought and activity in the industry, and to encourage further inquiries, comments and suggestions. The names and addresses of firms or individuals whose letters are published here may be had by writing to this office, or letters addressed to them in care of this office will be forwarded immediately.

Pearl Essence

We would like to know if you can inform us as to where we could possibly purchase essence of pearl enamel.—A. E. Co. (High Grade Store, Bar and Office Equipment).

Bleaching Wood

Can you offer any help as to how to bleach antique woods which have been stained or aged, so they can be refinished in their natural color?—S. C. Co. (Mfrs. of Elapsed Time Recorders).

Novelty Finishing

Some time ago I saw in your magazine an article dealing with quick finishing, in which was mentioned a stain with the qualities of water stain, but not using water, and which did not raise the grain.

We are finishing a few novelty items, a job which is new to us, and we have been using water stain with a varnish coat. However, we have to sand on account of the raised grain, and on a very cheap job this costs us too much. Please advise us if this stain will meet our needs and where we may purchase same.

If you can tell us of some other way to do a good job cheaply (gum finished in light maple) we shall appreciate your help. — T. H. B. (Composition & Fiber Ornaments).

Ash Tray Finish

On page six of your issue for August, you refer to a finish made by Cladite, Inc. We would like to correspond with this company in regard to a finish for ash trays. Will you please advise us where they can be addressed? — J. Iron Works (Five Plants).

It's 103 Park Ave., New York City. —Ed.

Airless Spraying

We have had called to our attention a device for painting which uses a rotary disc, instead of air to throw the paint. The machine we have reference to is operated from an electric-light socket and we are informed that it is very successful in putting on japan color or paint of any kind without causing spray or fog. Do you happen to know the name and address of the manufacturer or distributor of this device?—S. E. S. Co.

Rubbing, Sanding Machines

We are interested in the sale of a rubbing, sanding and polishing machine for furniture manufacturers and would appreciate it if you could mention some makers of these. We have noticed that Messrs. Paasche are manufacturing an equal ma-

Finish small parts in the

FILWHIRL ENAMELER

Wouldn't you like to coat as many as 120,000 to 225,000 articles, or parts, in an 8-hour day, as some are doing; and on small items, finish in quantities up to 600,000 per day? This method affects large savings in finishing materials, too. Learn more about this wonderful machine. Just send us samples of your products for coating in the FILWHIRL ENAMELER, and we will return them for your inspection. Write us TODAY!

THE LEON J. BARRETT CO.
Grafton Street, Worcester, Mass.

chine, but they are already represented in Sweden. We are only interested in real quality, and hope that you can recommend some good firms. — Aktiebolaget Nordstrom & Sjogren, Malmo, Sweden.

Roller Coating Machines

In February issue of INDUSTRIAL FINISHING, you show a cut and give a description of a Rollacoat slat finisher for painting Venetian blind slats. We are interested in a machine of this kind. Will you kindly give us the name and address of the manufacturer of this machine . . . . as well as other machines for a similar purpose.—G. Venetian Blind Co.

Dipping Machines

We would like to obtain the names and addresses of several manufacturers who make automatic dipping machines.—A. A. Co. (Automotive Accessories, Electrical Goods, Novelties & Housewares).

Portable Spray Booths

Can you tell me if there is any manufacturer of spray booths that manufactures a spray booth that can be moved around to different parts of the plant? It would have to be on casters so that it could be moved where it could be used on different jobs. It should have some type of exhaust that would not need to be connected with the outdoors.—D. M. L.

Penetrating Finishes for Pulp Products

In the May, 1936, issue of INDUSTRIAL FINISHING, we note an article on the impregnation of wood. In this article you mention that there are many companies impregnating materials of this type. We would appreciate your giving us a list of companies making materials for the impregnation of wood and other articles.

In this same issue you mention, under the title "Finishes Not Foolproof," that practically all problems have been solved except making finishes foolproof. In this article you mention that some companies were able to make an alcohol-proof finish.

(Continued on page 60)

PATINA

A Beautiful Walnut Color

Originally produced in Italy. Used on the finest and most expensive furniture. . . . Requests for samples are so numerous we must ask that customers furnish carvings or panels of their wood in the white, either walnut, maple, gum or birch. These will be finished PATINA, and returned as promptly as possible.

V. J. DOLAN & COMPANY, INC.

1830-32 North Laramie Avenue Chicago, Illinois

Manufacturers of
"Unquestionable Quality" Wood Finishing Supplies

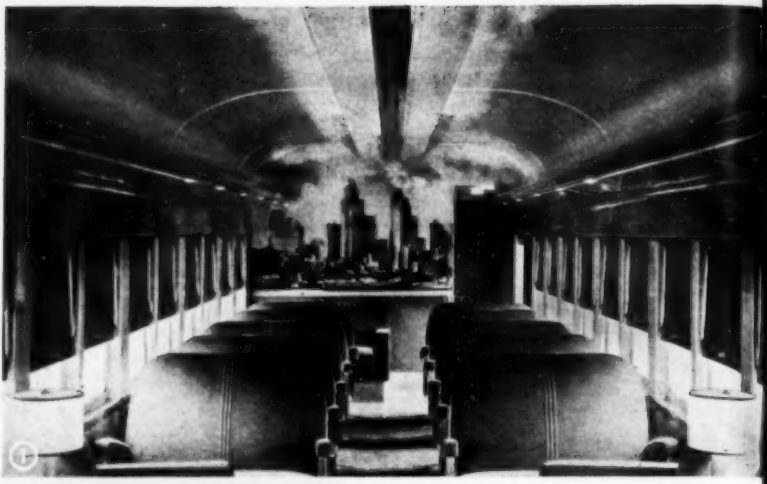
SURFACERS

PORES NEED FILLING for smooth - textured attractive finishes. Presdwood, celotex, natural woods, rough metals and porous compositions need quick-drying, easy-sanding, high-bodied surfacers—in short, our CEL-U-LAK Surfacers.

These have unusually high body, coupled with low viscosity, permitting a heavy application by spray; air dry to sand in 1½ hours, force dry at 125° for 20 minutes. They are ground finely and have phenomenal adhesion and resistance to moisture.

CEL - U - LAK Surfacers are standard in white, ivory, dark grey and red. They have for 6 years been an outstanding successful item in our line. We suggest you examine it for your requirements.

The
VARNISH PRODUCTS CO.
CLEVELAND, OHIO

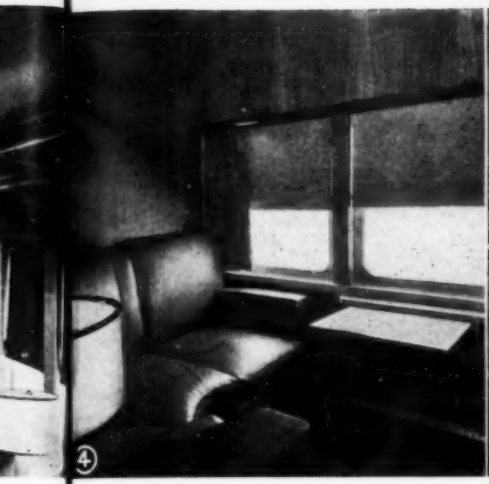


» » Design and

A DISTINCT departure from conventional design, arrangement and decoration, both outside and inside, is strikingly evident in the New York Central System's new streamlined train "The Mercury." Mr. Henry Dreyfuss, noted designer, was given a free hand in creating new beauty and greater comfort for passengers. In planning it, precedent and tradition were flung to the winds. The utilization and division of space in its seven cars, as well as the arrangement of its furnishings, are entirely new. In almost every respect, from illuminated locomotive to rounded-end observation car, this new streamliner is radically different from any existing train.

The Mercury was built on the concept that a train can be as luxurious as a private club and as comfortable, without in any way having its utility impaired. From end to end it is custom made.

The new train is a remarkable contribution to travel luxury and comfort.



and Color in Streamlined Train

Its steel cars are full size but weigh considerably less than standard equipment. They seat 200 persons. From front to rear they consist of: 1) a combination passenger and baggage car; 2) a coach; 3) a kitchen-pantry car; 4) a full length diner; 5) a lounge car with semi-circular bar on one side; 6) parlor car; and 7) parlor-observation car. All the cars have new and unusual floor plans and decorative treatments of outstanding beauty. They are of round roof or "turtle-back" construction. Windows and doors are set flush with the outside surface.

Key to Illustrations

1) View in coach, from center.
2) Waiting lounge in dining car.
3) Front-side view of locomotive.
4) Compartment in parlor car.
5) Middle section of dining car.

Innovations in the floor plans of the cars and in their appointments make The Mercury remarkable in comfort and originality. For example, for five of the cars, Mr. Dreyfuss has designed semi-circular vestibules which are colorfully decorated and much more spacious than the ordinary vestibule. Baggage racks of aluminum have large cylindrical edges which are utilized as part of the lighting scheme. In the ends of both the parlor and parlor-observation cars, extra rooms are provided for checking baggage and wraps as one enters.

The interior decorations of all seven cars, while differing markedly in details, are mostly in rich tones of brown and rust, contrasted with various light shades of tans, gay greens and blues. Silver aluminum is used throughout as a metal trim. Use of the same colors but in different tones

and in varying combinations, while identifying the cars as parts of a single train unit, eliminates the monotonous appearance occasioned by the customary repetition of a single color scheme. The color treatment has been designed psychologically to make every car appear inviting, comfortable and exclusive.

Coaches are done in medium browns, pale tans and blue greens. Walls are soft medium brown; ceiling very pale tan, almost cream; floor, mottled blue-green.

The rows of horizontal seats at each end of the coach are upholstered in soft medium brown, with removable head-rest slip covers of tan color. In the center section of the car are four massive built-in chairs in blue green mohair facing each other, with their backs to windows. Tables and reading lamps separate adjoining chairs. This plan shortens the length impression of the car by opening up a wide passageway between these "lengthwise" seats.

Mr. Henry Dreyfuss, Designer of the train.

In the coach smoking compartment, walls are metallic green; ceiling, buckskin tan; floor, dark brown; built-in seats are upholstered in fine-grained dark tan leather; chairs are upholstered in smooth blue leather; window shades are tan; curtains are blue with an uneven white and tan coarse stripe; trim is brushed aluminum.

The full-length dining car is divided by glass partitions into three inviting rooms, exclusive of a convenient waiting lounge at one end. The center room has a new banquet arrangement—a series of massive built-in semi-circular seats, with their backs to the windows. These blue leather seats face semi-circular pedestal-type tables, each seat and table accommodating two people seated side by side. Above the windows and up to the broad blue stripe extending lengthwise of the ceiling, the color is a light tan. Carpet on the floor is brown rust. Venetian blinds are brown and tan. Trim is walnut flexwood and brushed aluminum.

The end rooms of the diner, with the usual dining car seating arrangements, are done in soft tones of brown and tan — like your favorite grill room.

The lounge car—done in deep rich browns, rust, green and gold — is furnished with luxurious movable chairs and built-in couches. Walls are brushed brown walnut; bar, dark brown butt walnut with large mirror back; ceiling, dull gold; floor, rust colored carpet; chairs and couches are upholstered in smooth-grained blue leather and pebble-grained tan leather; Venetian blinds are tan with green stripes; curtains are coarse woven with uneven stripes of tan and white wool; trim and molding, brushed aluminum.

In the parlor car you find large movable chairs, tables and reading lamps that give the informal and inviting atmosphere of a home. Warm colorings of tans, browns, rust and gold provide a restful background. Hand bag-

age and coats are checked in a separate room at the end of the car. A beautifully furnished exclusive compartment with curved walls is located in the middle of the parlor car.

The lighting is provided just where it is needed and in exactly the right intensity. The lighting system's utilitarian features have been employed by the designer to provide the finest decorative effects. In the coaches the general illumination comes from a broad band running the entire length of the coach in the center of the ceiling. This ceiling section also conceals the air-conditioning ventilation system. Individually controlled reading lights and specially built table lamps conveniently placed, supplement the general indirect lighting. In the women's salons, brilliant lighting over full length mirrors directs the rays of light where needed—on the mirrors and on the ladies' faces instead of on the tops of their heads. Various lighting innovations are found in all the cars.

New Soft Texture Flock

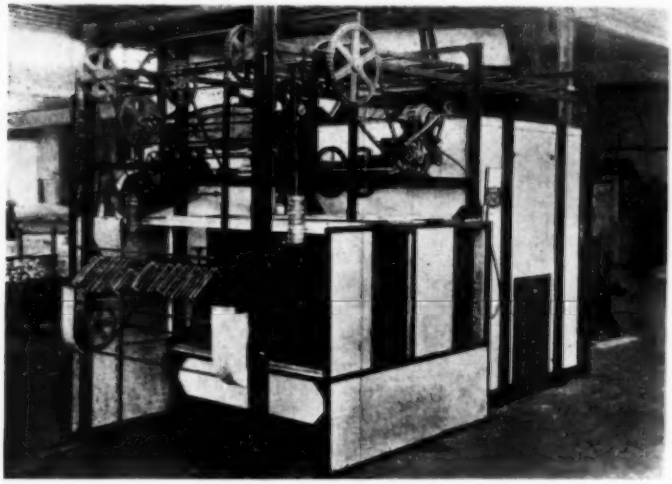
AFTER HAVING had experience with flock since it was first put out, I have found that the new flock now on the market is a great help to those who wish to have a more natural cloth-like effect on their products. This new flock is a softer and longer fiber flock than was on the market previously. It is soft and silky, covers more easily, covers faster, goes as far as the old flock, and produces a finish that is a boon to anyone who can use it. The same adhesive or sizing material and spray equipment can be used as was employed with the old flock. It is particularly useful as a covering for card tables, and as a lining for the interiors of buffet silverware drawers, and for showcases, jewelry cases, trunks and traveling bags.

This flock comes in several colors and can be applied over metal, wood, carboard or fiber; it covers one as well as the other. While being sprayed, the air pressure inside the container can be cut down somewhat as compared to the pressure used for spraying the former flock, and it should be released from the gun in a thinner stream than was previously used.

The new longer-fiber flock can be salvaged the same as before, therefore you can get the same "mileage" that you did previously. If the proper sizing coat is used, this flock can be air dried in at least 25 minutes to half an hour, or it can be oven-dried in about 15 minutes at a temperature of 200° to 250°F. This heat will not injure the flock in any way.

All salvaged flock should be run through a strainer before being used again. A concern that is using as little as 10-lbs. of salvaged flock a week can use a small flour sifter to sift the flock, and they will get good results; but when a company uses as much as 5 to 10-lbs. per day, an electric sifter is far more practical.

Excessive humidity or any dampness in the air in a finishing room is likely to make any flock lumpy. This lumpiness can be remedied by placing a quantity of flock for immediate use in an oven (heated by indirect heat) for about 15 minutes and then sifting it.—HOWARD H. FORD.



Automatic Dip Finishing and Drying Machine

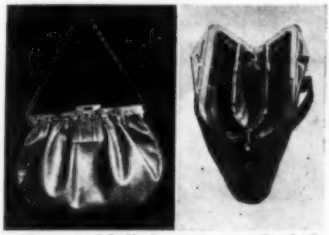
by Chas. W. Hardy
Industrial Consultant

THE PROBLEM of coating large quantities of certain small and medium sized metal parts rapidly and at low cost can often be taken care of very effectively with an automatic dipping and drying machine of the continuous conveyor type. While one of these machines looks expensive—and it really does cost considerable money—the savings it can effect on certain types of work may pay for the investment within as short a time as four or five months. Lacquers, varnishes, enamels, japans, paints and other protective and decorative coatings can be economically applied in this manner.

Most concerns, before giving much thought or study to the problem, are skeptical about making the investment necessary to install automatic dipping and drying equipment—the management generally declaring that, "it can't be done on our product." But this mechanical equipment and the excellent results it produces are not new. Parts have been finished in this way success-

fully for the last 15 years by some manufacturers.

It is evident that the most positive way to cover the entire surface, including all crevices, angles, contours, etc., of irregular shapes or complicated designs, is to dip or immerse each article in the liquid coating material. When this is done we are quite sure that



Frames of ladies' purses are effectively finished by the automatic dipping machine shown on the preceding page.

the entire surface is completely covered. Hand dipping, of course, is slow and costly, and the attendant drips, sags or runs are objectionable on anything but the very cheapest kind of common work.

Major factors to take into account when considering the installation and use of mechanical equipment of this kind are:

1) Design of the machine; size; transmission; oven; etc.

2) Design and size of dip tank, right clearance, etc.

3) Type of agitation required, if necessary.

4) Drying or baking temperature and interval of time required.

5) Means of dissipating heat and fumes. Fire hazard.

6) Production requirements. Quantity, sizes and shapes.

7) Proper racking or means of supporting parts being coated.

8) Rate of travel; speed of removal.

9) Position parts must be held for dipping, draining and drying.

10) Viscosity and other characteristics of the covering material.

In many cases automatic dipping apparatus is installed in such a manner that it is directly coupled to a drying chamber or baking oven, thus eliminating any handling or transferring of parts between these units. Work is hung or racked on the machine at the loading end; then it is removed, finished and dry, at the other end. The time and heat factors are positively controlled, removing the human element, which is quite an advantage.

Finishing Bag and Purse Frames

The machine illustrated in this article is used for lacquering the metal frames of ladies' hand bags and purses. It has been in daily use since 1927. Here the problem of supporting the slender metal parts was solved by the use of removable racks, there being three different size racks designed to take bag and purse frames

One of the removable racks which can be loaded with purse frames and then hung to horizontal bars of the conveyor, as shown in the illustration at the beginning of this article.

ranging from 3 to 10-in. long. The loaded racks are hung on round cross bars which are evenly spaced and supported by parallel conveyor chains.

The base metal for handbag

frames is generally brass or cold-rolled strip steel. Finishes consist of gold, silver, brass, copper, nickel, etc., in highly polished and satin luster. It is necessary to coat these metal frames in such a way that they will be completely covered without a run, sag, or drip. The finish must be smooth and of uniform thickness, with good adhesion and hardness of film, as the article is put to hard usage when in service.

The galvanized-iron dipping tank of the machine is tincoated and holds about 75 gallons of material. Additions of lacquer and thinner are made daily and in the right proportions.

The steam-heated drying chamber is well insulated, and its temperature is held at an even heat of 125°F. Of course, the drying chamber could be heated with indirect gas or electricity, depending upon facilities available at the plant and the preference of management.

The power transmission between motor and conveyor includes a variable-speed control (5 to 1 ratio) so the speed of the machine can be easily and quickly changed to whatever speed is most desirable for different classes of work. This machine can be so designed that it will take care of different colors and variations in the heat requirements.

Coating Cheap Jewelry

In some plants manufacturing cheap jewelry I know of installations where one girl, by loading and unloading, takes care of a production of 24,000 pieces in eight hours. In one such case the application consists of putting on a transparent lacquer over a cold-rolled strip steel part which has been brightly tumbled, copper plated, brass flashed and bronze plated. Each part measures about 4-in. long. The final finish is a very good imitation of gold plate. Assume that the operator earns 30c an hour. With an average hourly production of 3,000 pieces, the labor cost is only 10c per 1,000 pieces.

Material cost figures are surprisingly low. They are based on the number of parts made, divided into the value of lacquer and thinner drawn from stock and put in the machine; and they average 15c per 1,000 pieces. This covers the cost of all material actually used including any that is spilled, lost or evaporated. I have been told that before the machine was installed the material cost amounted to more than 50c per 1,000 pieces. After the machine was placed in service rejects were reduced from a previous 10% to practically nothing.

Important factors in the saving included less floor space, less confusion, less handling, a decided improvement in the finish, and a substantial reduction in the cost of direct labor and material. As a matter of fact the right kind of installation practically does away with management's problem in the application of fine protective and decorative coatings.

Lacquer blushing on humid days is forgotten. It is not necessary to use retarders; good work can be done on hot, humid days. Heat from the drying unit is dissipated over the dipping tank, thereby keeping all moisture out of the mixed lacquer and thinner. This matter of blushing, I understand, is quite a problem with some manufacturers. Out-

See How the New Finishes Look on Your Own Work

Some of the most attractive finishes shown at the Furniture Markets are originations or developments of our Finishing Studios.

Many of the finishes we have brought out have become standard and for authentic effects, furniture manufacturers are becoming accustomed to refer to us first.

Among the popular finishes in which our designers have pioneered and excelled are:

Bleached and Blond (all woods)
French Walnut
Old World Mahogany
Delatone
Practical Finishes on Elm
Georgian Mahogany
Sheraton Mahogany
Maple on Poplar and Gum
Modern and Antique Maple
Cherry
Fruitwood in the Newer Tones
New Effects in Bone White, Old Ivory, etc.
Pickled Finish

You can now see how the new finishes will look on your own work. Send us unfinished panels or carvings from your regular stock and mention the finishes in which you are interested. We will finish the pieces and return to you with full information. No obligation, of course.

Send the panels today.

JAMES B. DAY & CO.

Makers of Fine Finishes for Wood and Metal

CHICAGO

ADVERTISING PAGES REMOVED

standing features are that: 1) the machine eliminates entirely the human element by being automatic in its timing, thereby producing a uniform covering; 2) it affords insurance that the surfaces of parts will be properly covered; 3) the work is dry and ready to handle safely when it reaches the end of machine.

Color and Decoration on Housewares

AT the New York Housewares Show, recently held in New York City, there was marked emphasis on the benefits of color standardization—a subject much in the limelight at present in several consumer lines. A group will undertake this for the home furnishings field. The president of one of the largest department stores in New York City stated that such standardization is of the utmost importance in current ensemble selling of homewares merchandise for both the retailer and the manufacturer.

This standardization would do away with several different shades of red, green, blue, ivory and white, the most popular ensemble colors for the home—particularly the kitchen and dining room.

Red was the featured color for kitchen enamelware at all exhibits; it seems to be greatly in demand in all parts of the country.

In many exhibits there was a marked tendency to bring blue to the front, to take the place of the popular red and green.

Delphinium blue was a leading shade and much favored. Dark shades of blue were also in evidence, in all-over, trimming and accent features. These shades tied in with displays of not only kitchen and dining room wares, but of woodenware and cutlery.

A deep ivory, with red trimmings and accents, was a favored color scheme. The newest idea now is white with trimmings and accent shades in bright colors or floral designs, in a conservative design and not especially large.

Cooking utensils in enamelware have a tendency to look more like old English pottery, with newer and somewhat modernistic shapes in evidence. Covers are receiving a great deal of planning also. Black was shown as an edge trimming and accent color. Glass knobs were shown in plain and modernistic stepdown designs; also black wood knobs and handles. Practicability and utility features were not neglected in the newest designs.

The finest display exhibit of canister sets showed conservative floral designs in pastel shades rather than pin lines, bands or polka dots, etc. Along with these de luxe sets were cake cans and a new feature in a cookie can like cake cans, but much smaller; trays of different sizes, and other kitchen containers to match. Also, there was a line of candy boxes without advertising that could be used for kitchen containers.

The same ideas in uniformity of color shades applies to bathroom equipment, as well as to kitchen and dining room fittings.

Kelsan Products Moves Plant

Kelsan Products (liquid rubber products; non-inflammable) announces removal of its plant and general offices to larger quarters at 1015 S. 6th St., St. Clair, Mich.

Buffing Furniture Finishes

by W. T. Smith

Manufacturers of furniture and wood novelties have long dreamed of buffing as a possible means of producing a smooth, lustrous sheen on their lacquered, varnished and enameled surfaces; but many of the attempts at buffing such products have failed, therefore the author's experience in working on this problem should be of unusual interest.

▼ ▼ ▼

IN THE MANUFACTURE of articles finished in lacquer and varnish, such as small table-type radio cabinets, smokers, cigarette boxes, fruit bowls and trays, the problem of producing a rubbed and polished finish, with its appearance of finished richness which marks quality merchandise, is a difficult one. A rubbed job of any sort reflects only too faithfully the amount of mechanical energy expended in its attainment, and the result is directly proportional to the amount of rubbing the piece receives. True, there are differences in methods of hand rubbing, which will not be discussed here; but regardless of method, there is—to generalize—no short cut to a really "good" hand-rubbed job; elbow grease still remains the paramount ingredient of any rubbing compound.

Abandoning, therefore, any pretense of opposing this apparently inflexible principle, the writer undertook to seek a method of doing this required vast amount of frictional truing of surfaces in a more rapid and easy manner. In any rubbing operation which is to culminate in a high polish, it is the logical custom to start with a relatively coarse, fast-cutting abrasive (such as pumice or carborundum, either free or affixed to a backing paper, coupled with a suitable lubricating agent) to rough down the raw surface rapidly, following which additional

operations—all frictional and mechanical—are necessary to remove scratches and further perfect the surface.

After all, a polish is merely a mechanical perfection of surface in which scratches are reduced to a minimum size. A dull-rubbed surface has larger scratches. If an entire rubbing operation were performed with a relatively soft amorphous abrasive, such as tripoli, a finished job would be produced in one operation. No scratches would be put in which require removal by a change of agent. Obviously, in the hand operation customary on small irregular-shaped objects, or even large ones, the amount of labor necessary to reduce the surface with so slow-cutting an abrasive would attain a degree of impracticability approaching the ridiculous.

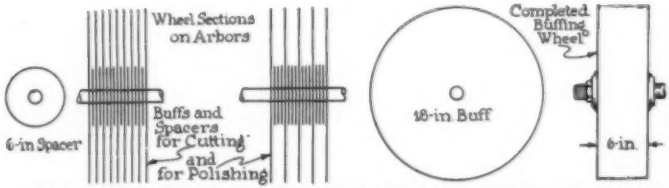
The answer, therefore, would seem to be to introduce a mechanical device to make a great many more strokes over the surface in a given time than can be made by hand. The stroke rubber—excellent as it is—makes but few more strokes than a hand rubber. [This is the large stationary machine.] It merely makes a longer one with controlled pressure and accurate alignment, and doesn't get tired. The small portable rubber, with its multiple hundred strokes a minute, is limited in service to flat or gently curved surfaces, and makes a very short stroke. The small disc sander will rub if equipped with proper pads, but it produces a circular effect like a brush-twirled wall finish. A flexible shaft equipped with proper wheels will rub a piece of furniture, but if so equipped to perform the work, it defies any man to hold it securely or control it efficiently.

Kind of Buffing Wheel Used

Our attention turned therefore—with no great originality perhaps, since, like the perpetual motion machine, "it's been tried before"—to the cloth buffing wheel, long the efficient servant of the metal plater. Rather than tire readers with details of the ensuing experimentation, let us state baldly that it was found possible to buff a conventional furniture finish to an amazing luster and brilliance in a length of time entirely commensurate with ordinary rubbing schedules.

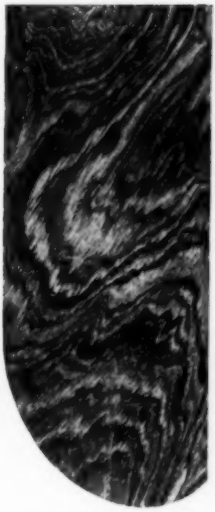
The work was done on a fixed wheel and embraced only such work as could be picked up and held against such a wheel.

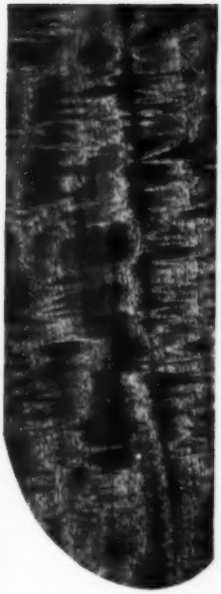
The wheel used is built by the user from the so-called "loose buffs" which are merely circular discs of muslin obtainable in a wide variety of diameters. An



Details of the assembly of buffing wheels for rubbing (cutting) and polishing lacquered, varnished and enameled surfaces on small items of finished furniture.

Faithful Reproductions





Marble *and* Wood Grain

These beautiful surface effects are obtained with the utmost economy in finishing, through the newly improved OXVAR Process. Distinctive and exclusive designs are possible with all the depth, tone, beauty and changeability of original wood grains and marbles. Reproductions by the OXVAR Process are applicable to practically all surfaces, including wood, metal, glass, wall board, and composition surfaces in both sheets and fabricated products. Already meeting the needs of hundreds of manufacturers, you can make no mistake investigating its merits and adaptability to production. Write us!

Our Art, Color and Design Department is ready at all times to assist you or your color design engineers in adapting this process to your production. We maintain an engineering staff, and complete service for installing the process.

OXFORD VARNISH CORPORATION, DETROIT, MICH.

Processes patented in the United States and foreign countries

18-in. diameter will be found suitable for most work. The buffs are supplied by any plater's supply house and come in ½-in. "sections" composed of 18 buffs stitched lightly together near the center hole. This center hole will be punched to the size required for your shaft, by the supplier. The buffs are separated by ripping the stitching. They are alternated on the shaft by the use of spacers, which are merely smaller buffs one-third the diameter of the wheel, or in this case 6-in.

The purpose of the spacers is to regulate the hardness of the wheel, and is variable according to the taste and experience of the user. For a cutting wheel, the use of one spacer is recommended —that is an equal number of spacers and buffs in alternate order. A wheel of about a 6-in. face will be found suitable. Since the buffs run two sections or 36 to the inch in thickness, this 6-in. wide wheel will require six ½-in. sections of each, or 12 in all. The canvas wheel thus described is built up on a suitably-mounted shaft—an ordinary grinder arbor is ideal — and clamped between collars of not more than 3-in. diameter. No other fastening of the buffs is used.

The Polishing Wheel

The polishing wheel is made in exactly the same manner, but with more spacers—from two to four between adjacent large buffs, thus making a softer wheel. The new wheels, being quite ravelly on the edges, are then dressed by holding a block covered with No. 2/0 sandpaper against the face of the revolving wheel. When doing this, it is recommended that the operator wear a respirator, as the amount and fineness of the lint produced is startling to say the least.

The speed at which the wheels are rotated is of vital importance, and will be governed by the nature of the finish coating to be buffed and the diameter of the wheel. Since the greatest enemy of this operation is frictional heat, the speed of the wheel must be low enough to avoid excessive heat, but at the same time high enough to produce efficient cutting. Experimentation has shown the efficient wheel speed (on the rim) to be about 2,800-ft. per minute for lacquer finishes, and about 2,300-f.p.m. for varnish. The following table will convert these speeds into terms of r.p.m. for various wheel sizes.

Wheel Dia. in inches	—for—R.P.M.—for— Lacquer	Varnish
10	1,000	890
12	910	750
14	780	640
16	680	560
18	610	500

The wheel turns toward the operator, just like a grinding wheel.

The cutting wheel is treated with a bar of tripoli compound (obtainable from any plater's supply house) and consists of tripoli fixed in a stearic acid base. The tripoli is held firmly against the face of the wheel until an appreciable amount is transferred to it. The exact amount can be determined only by experience. An excess amount will be indicated by a tendency of the compound to be deposited onto the work in smears. This condition may be corrected by holding the sharp corner of a

If your finishing room is under suction . . . if dust particles are in the air . . . if temperature is not automatically controlled . . . if you have hot and cold spots . . . if you have drafts . . .

You Can Correct These Troublesome Conditions

Even if you are not at a disadvantage from any of these conditions, you may be paying too much for your Finishing Room Heating. Investigate Ross Systems For Finishing Rooms. Write our nearest office to have a representative call. No obligation, of course.

J. O. ROSS ENGINEERING CORPORATION

350 MADISON AVE., NEW YORK

CHICAGO DETROIT PITTSBURGH PORTLAND, ORE.

ROSS FINISHING ROOM SYSTEMS

PIONEER BUILDERS OF AIR HEATERS

block of wood to the wheel face to remove the surplus.

Presenting Work to Wheel

The article to be buffed is held firmly against the wheel and moved back and forth in a direction parallel to the axis of the wheel, and progressing from the lower edge upward. When a point near the upper edge of the article is reached, reverse the piece to complete the surface, as upper edges or ends must be prevented from engaging the wheel; otherwise the article will be dashed from the operator's hands. Practice will enable the operator to exert heavy pressure without burning the finish, the secret being to keep the work constantly moving to avoid too long a sustained pressure in one spot. It is not necessary to follow the grain of the wood. Surfaces may be crossed indiscriminately. The wheel is of sufficient softness to enter depressions, corners, flutings, etc., and will work a surprisingly irregular surface without undue damage to edges.

The polishing compound for the final luster and brilliance is the so-called plater's "lime finish" or "white finish." It is also a bar compound and is applied to the wheel in the same manner as the bar of tripoli. Polishing requires only a very light touch, and very little friction is produced. Contrary to the cutting practice, the work is moved *with the rotation of the wheel* rather than against it, and with a light stroking movement. Care must be taken to avoid sustained pressure at any one point, as the polishing wheel will "burn" or blister the finish more quickly than the cutting wheel. The procedure on lacquer and varnish is essentially the same, with the exception of wheel speed previously indicated.

The finish produced by this method will be of unusual brilliance and depth. In fact, a piece polished in this way and compared to another bearing the same lacquer system, but hand rubbed and polished, actually appears to have had another coat of lacquer, due to the increased depth of the polish.

What Finishes Buff Best

Naturally, any varnish or lacquer will not buff to the best advantage, although it is a fairly accurate statement to say that any finish that will rub, will also buff reasonably well. To buff well, a lacquer should not be, as one might suppose, very hard. On the contrary, it should be more "plastic," the reason being that the wheel not only cuts the lacquer film but, to a certain extent, it literally "irons it out." The use of elemi gum or rapeseed oil in combination with dammar will make an excellent buffing lacquer. In varnishes, strange as it may seem, the flat materials will buff better than the clear, due probably to the lubricating effect of the flatting agent. The preparation of articles for buffing will not differ from that for any conventional rubbing operation, as no special undercoatings or number of coats are necessary.

One interesting fact will be apparent in buffing a small radio cabinet, for example. On wood panels or parts that are less than ⅜-in. in thickness, an increased tendency of the finish to burn or blister will be observed; while parts ¾-in. or more in thickness, with the same finish, will with-

"Red Hot—the Finish Holds On"

HILUME

Heat Resisting Vehicle for Aluminum

A vehicle for aluminum powder which reaches a new high in heat resistance. The aluminum finish made with this vehicle hangs on the surface even if it becomes red hot.

This extreme heat resistance makes Hilume an ideal aluminum vehicle for use on boiler fronts, auto exhaust manifolds, hot water heaters, radiators, pipeless furnaces, steam lines, electric light reflectors, airplane motor cylinder heads, oil burners and other surfaces which are subject to unusually high heat.

Send for a sample of Hilume Heat Resisting Vehicle, with aluminum powder added for your convenience, and make this test:

> *Pour some of the mix on a metal plate, let dry for 10 minutes or a day. Hold it over a flame until it becomes red hot, then let it cool and see how the finish is unaffected—no signs of flaking or peeling.*

If you prefer, ask for a steel plate already prepared with Hilume.

HILO VARNISH CORPORATION

HILO

73 Years Experience in "Better-The-Finish"
42-60 Stewart Ave. Brooklyn, N. Y.
Chicago — — Boston — — Philadelphia

Varnishes Enamels Japans Lacquers

stand much faster cutting. The answer is presumably a matter of thermal conductivity whereby, in the thicker piece, heat is conducted away from the surface to a much greater extent and the part does not heat through so readily.

It would not seem necessary to confine the proven advantages of a buffed finish to toilet seats, tobacco pipes and novelties as named, and probably won't be after someone builds a machine to operate a buffing wheel on a universal arbor, suspended and movable in any direction over a table top, piano, or radio cabinet and counter balanced in order to be amenable to the application of desired pressure by the operator, as on a stroke rubber or sander.

Industrial Equipment Catalog

An attractive illustrated catalog covering such industrial sheet-metal work installations as various types of modern spray booths, ventilating and exhaust equipment, fans, air ducts, compartment and conveyor-type ovens, dust collectors, hoods, piping, etc., together with valuable engineering data, has been prepared for distribution by the Grand Rapids Blow Pipe & Dust Arrester Co., 526 Monroe Ave., N. W., Grand Rapids, Mich. The book contains 28 pages 8½x11-in. of heavy enameled white paper, printed in two colors and bound between heavier tinted paper covers. It's an excellent reference book for practically every type of industrial concern.

V. J. Dolan & Co. Adds Men to Organization

The V. J. Dolan & Co. (wood finishing supplies) 1830 N. Laramie Ave., Chicago, Ill., announces the addition of two valuable men to its organization, as follows:

Mr. Don J. Olmetti will work as service man and demonstrator with the company's various salesmen. He has had over 15 years of experience in practical finishing in all lines ranging from the manufacture of pianos to radios and custom-built case goods.

"Wally" Schick, who has joined the sales force, will cover portions of Illinois, Indiana and Michigan. Mr. Schick is very well known in the radio and furniture field, having had charge of production in the old Majestic Radio plant for many years.

Schaefer Varnish Co. Occupies Larger Plant

The Schaefer Varnish Co. of Louisville, Ky. (formerly The Schaefer Co., at 13th and Kentucky St.) recently purchased the large varnish plant of the Sun Varnish Co., at 15th and Magnolia St., which it now occupies. The plant has been completely remodeled and equipped with the most uptodate machinery for the manufacture of lacquers, varnishes and enamels used in wood finishing, and for special oils for paint manufacturers. Oil fires have been put in for the varnish department and an oil heating system has been installed to heat the main building of the plant.

The ground occupied by the plant is 185x370-ft., and adjoins railroad sidings of both the Illinois Central and the K. & I. R. R. Buildings are of brick and reinforced concrete, with a storage capacity of 400,000 gallons of material.

The rise of this company within the past few years has been phenomenal. According to a statement by President McGuire, the company is doing an annual business of $700,000, and with the present increased facilities, this amount should be materially increased in the near future.

Officers of the company are:

Thos. F. McGuire.....President
Harry F. Schaefer.....Vice Pres.
Nat R. Shellman.....Treasurer
Ralph F. Schaefer.....Secretary

These gentlemen, together with Mr. Thos. H. Anderson of Greensboro, N. C., and Mr. Wm. C. Schaefer of Indianapolis, Ind., form the Directorate.

Mr. McGuire, for many years prior to July, 1932, was Vice President in charge of sales of the Louisville Varnish Co. Mr. Harry Schaefer was formerly Vice President and General Superintendent of the Sun Varnish Co., which has been taken over by the Schaefer Varnish Co. Mr. Nat R. Shellman was formerly a Vice President of the Lincoln Bank & Trust Co.

On Saturday, August 29, the company held an opening day celebration and entertainment for its friends and customers at the plant.

Two lacquer
solvents with the right balance of characteristics—

BUTANOL *and* **BUTYL ACETATE**

Balance! That's the secret of Butanol and Butyl Acetate! Here individual characteristics operate to the greatest advantage of both lacquer maker and lacquer user. Be sure the lacquers you use contain the proper proportions of these ideal solvents and prove to your own satisfaction that Butanol and Butyl Acetate cut costs and improve the finish.

COMMERCIAL SOLVENTS CORPORATION

NEW YORK CENTRAL BLDG., NEW YORK, N. Y.
Plants: Terre Haute, Ind.; Peoria, Ill.; Westwego, La.; Harvey, La.; Agnew, Calif.

Spray Equipment for Synthetic Materials

THE NEW synthetic materials have numerous characteristics quite different from lacquer. Among these are that synthetics are more viscous and slower in drying than lacquers. Synthetic enamels produce a high gloss and are tougher than lacquer, and dry more rapidly than the old style enamels.

Both synthetics and lacquers are wet when applied to the finished surface. Lacquers dry almost immediately after spraying, while a longer interval is required for synthetic materials to dry. Consequently synthetics have a greater tendency than lacquers to run or sag.

Due to the nature of synthetics, it is necessary first to apply a light coat, a little heavier than a mist coat. After an interval, a heavier coat is then sprayed on. Higher air pressures than for lacquers are needed to break up and properly atomize the synthetics.

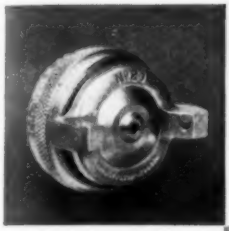
The high gloss of synthetic materials accentuates any surface or undercoat defects. This necessitates fine, even, full-bodied application of both undercoats and finish coat. Synthetics, therefore, must be sprayed with spray guns that will finely atomize the material and apply it to the surface with uniform smoothness, and in such manner as to avoid those objectionable runs and sags.

We have been frequently requested to supply brief general material which explains the essential difference in the spray equipment used in the application of synthetic materials as compared to lacquers.

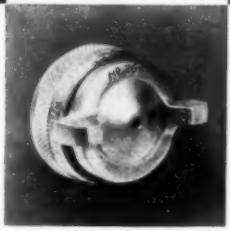
There seems to be so much interest in the subject that we thought it advisable to prepare a condensed treatment which would be void of technicalities, yet suitable for publication.

We enclose a copy of this explanation and photographs which will help illustrate the difference between the air caps (the business end of the spray gun), used with lacquer from those used with the new synthetic materials. You are at liberty to use it in whatever manner will best serve the readers of your good publication.
—THE DEVILBISS COMPANY.

The development of synthetics consequently changed spraying conditions and requirements, inasmuch as spray equipment designed for the application of lacquer was generally not satisfactory for use with synthetics. Progressive spray equipment manufacturers met the problem by improving the general quality of equipment, producing new spray guns with improved atomi-



Above: No. 30; for a suction or gravity feed; lacquers or synthetics; atomizing air pressures of 50-lbs. and more. Has an air port in each horn, and two small jets close to center orifice. Sprays the light bodied or heavy bodied finishing materials.



Below: No. 36; older type air cap used for suction-feed spraying of lacquers, etc. Also suitable for gravity and pressure feed under certain conditions. For air pressures up to 60-lbs. Has only two air ports, one in each horn.

Above: No. 76; pressure feed multiple-jet air cap for large production with heavier bodied lacquers, primers and synthetics. Has two air ports in each horn and four auxiliary jets near orifice. Not recommended for the lighter bodied finishing materials.

zation, improved spray patterns, improved adjustments, easier handling and manipulation, and improved and more foolproof design.

The new types of spray guns are designed to spray modern finishing materials with greater efficiency, producing higher quality finishes with less effort and at lower cost. They are universal spray guns. With proper nozzle combinations they may be used with any sprayable material.

More Air from Spray Gun Nozzles

Larger air passages in the new spray guns permit a greater volume of air to be brought up to the spray head, or working end of the gun. There is less air pressure drop through the gun, and the proportion of air to material flow is increased.

The spray head has large port openings and a baffle arrangement which insures uniform distribution of air to the horns and center orifice of the air cap. This results in uniform atomization of material and a balanced uniform spray pattern.

Working conditions, products, surfaces and materials vary considerably and require the proper combination of air cap and fluid nozzle for maximum efficiency and highest quality finish. New style air caps have four or more air ports for synthetics, while the old style such as used for lacquer has only two air ports. Spray heads are supplied by the spray equipment manufacturer with the particular air cap and nozzle combination recommended for the kind of work being done, for the particular material feed in use and the speed of production required.

The improved multiple-jet air caps produce better atomization, better spray patterns and more

uniform application of material. They provide greater air volume, prevent split sprays at higher pressures, and produce even application instead of a heavy center type of pattern. The small nozzle size and consequent reduction of material flow saves material, provides greater air volume in proportion to material flow and prevents sags or runs.

Air Transformer and Compressor

Next in importance to the spray gun in producing high quality finishes is the air transformer. This equipment regulates the air pressure and allows only clean dry air to reach the spray gun, thus protecting the finish from defects.

The compressing unit must be of sufficient size (in cubic feet of air per minute) to keep the spray gun in continuous operation at the desired pressure. Maximum efficiency, speed and quality of finish cannot be expected of any spray gun unless the air compressing equipment constantly delivers the volume of air consumed by the air cap. The compressing unit must be capable of efficient and trouble-free service.

There is costly waste in the use of old, worn or obsolete compressing units, or in the continued use of out-of-date, inefficient spray guns. Such losses far exceed the cost of new, modern, improved equipment.

Adequate Size Air Hose

The diameter and length of the air hose used have a marked effect upon the efficient performance of a spray gun and the quality of finish it produces. Too often the spray gun is blamed for functioning improperly when the real cause is an inadequate supply of compressed air. Even considering the enlarged air passages in modern spray guns, this improvement is too frequently offset by the use of improper size air hose.

Plant Expansion of Detroit Rex Products

Because of the great increase in demand for Detrex Degreasers by the metal-working and finishing industries, the Detroit Rex Products Co., 13005 Hillview Ave., Detroit, Mich., has had to seek additional quarters and increase their manufacturing facilities. New equipment is now being purchased and installed to facilitate the production and delivery of both standard and special designs of Detrex Degreasers.

Spray Equipment to Your Door

Illustrated in the accompanying cut is the new demonstrating car used by the Binks Mfg. Co., of 3114 Carroll Ave., Chicago, Ill., to aid in the selling of its spray equipment. The trailer car is 18-ft. long and is fully equipped. A 200-ft. extension cord can be plugged into a light socket at the plant where the Binks man is demonstrating, to furnish the electric power for the compressor.

This outfit enables the demonstrator to visit several plants in one day, showing exactly what Binks spray guns will do under actual spraying conditions, and still does not interfere with the plant operations.

This demonstrating car was built by the Rinehimer Bros. Mfg. Co., at Elgin, Ill., and is merchandised under the name "Daggett Mobile Mart."

The demonstrator car is novel, attractive and convenient to buyer and seller.

Feminine beauty consists of good lines and a smooth, velvety skin glorified by the deft application of well chosen cosmetics. It's the finish that's most important.

Beauty in commercial products likewise consists of good lines and the deft application of the proper finishing materials. We'll leave the cosmetics to the ladies . . . they know how to use them . . . but when it comes to finishing commercial products we are confident we can be of service to you. Our creative studio, under the personal direction of an artist who has hung many a canvas, has solved numerous finishing problems for manufacturers.

In many cases the added beauty and stronger consumer appeal of the rejuvenated products have upped sales without increasing production costs.

This constructive service is offered to reputable manufacturers without cost or obligation.

Write us about your finishing problems.

Rockford Varnish Co.

ROCKFORD, ILLINOIS

Photographic Method of Making Silk Screen Stencils — II

by Harry L. Hill
Silk Screen Expert

This is the concluding installment of a two-part article dealing with Silk Screen Printing on Textiles. The first part of this article was published in the August issue.

TO REPRODUCE a drawing with fine lines is a matter of exposure. If the exposure has been too long, even two or three minutes, there is danger that the fine lines can not be opened up or washed out in the screen.*

After exposure, the screen must be washed with very hot but not boiling water. A small hose attached to a hot water faucet works very well. Flush water over the front and back; turn screen over and wash front and back again. Don't use pressure in flowing water over the screen with a hose. Hold hose about 12 to 16-in. away from screen. As soon as all yellow color disappears from the screen, stop washing at once. (This is like washing a freshly developed photographic film in a photographer's dark room.)

The washing can be done in a subdued light because when the screen is wet, exposure to light is harmless. After hosing, rinse screen with cold water from faucet with hose.

Now comes a procedure which, although extremely simple, is of vital importance. It is blotting the moist screen. Without blotting, success is rare. If the screen

*To be absolutely sure of timing the exposure correctly, make a pilot sample screen, proceeding as follows:

Draw a number of straight parallel opaque lines of varying widths, each about 15-in. long, on a piece of the thin celluloid. Suspend the electric light any distance that may be necessary to make the exposure. Distance of light from celluloid depends entirely upon the area of the surface to be illuminated.

Expose these lines on a small pilot screen, but not all at once. Cover all but about one inch (length) of them with a piece of black opaque paper. Let paper protrude from underneath the top plate glass so you can pull it out as you desire. The celluloid should not only be laid flat upon pilot screen, but it should be pasted down at the corners with a transparent adhesive.

Now with a watch, pencil and paper at hand (so as to get a record of exposures) turn on the light. Expose for one minute; then pull out black paper just a little; expose two minutes, and so on. Cover up each exposure as you go along with opaque black paper. Weight paper down so light will not seep under it.

After the pilot screen is washed and finished you can easily see, when printing the lines, which exposure is best for the lines drawn. This is the Vincent V. Colby formula, and I have used it with complete success.

is not blotted immediately after washing, the insoluble part of the solution will form a fine glittering surface in the open spaces. This is called "scum" and if it is allowed to dry in the screen it will obstruct the passage of material through the stencil when printing. When dry, this scum is practically impossible to remove. Scum will never form if the wet screen is blotted.

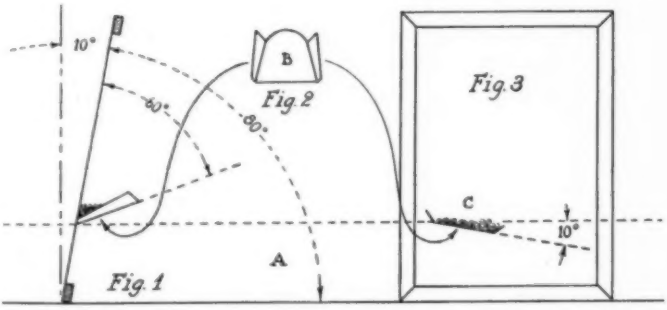
To blot, place a double thickness of clean smooth white cotton material on a perfectly flat table or piece of plate glass. This material must not be fuzzy or linty. Place the moist screen on top of cotton material, stencil side down. Inside of screen, place another double thickness of like material. Place a piece of stiff carboard on top of the cloth and press down gently with both hands all around. Blotting takes but a few minutes. Then the cloth can be gently peeled off and the screen is ready for drying. Stand the screen up before an electric fan and it will dry in a few minutes. Never use heat to dry a screen, as this may cause it to warp and buckle.

All bicromated glue or gelatine solutions are soluble in water when not exposed to light. When exposed to light they are practically insoluble in water, but not to the extent that they can be used for a screen when printing with water colors.

The Protective Coating

The best protective coating I know of for a photographic screen for textile printing is made of a mixture of Bakelite varnish, China wood oil and a good grade of oil enamel. Bakelite is resistant to caustics, which is necessary, as the colors now used for textile printing in the U. S. contain from 8% to 15% caustics. China wood oil helps add to the flexibility of the Bakelite varnish, and the oil enamel gives body and durability to the protective coating. Four-hour drying enamel is ideal for this work.

The approximate proportions of the mixture are: Bakelite var-



When coating the new photographic silk screen with a special protective coating, apply material with winged scraper (B, Fig. 2) holding it in the position shown in Figs. 1 and 3, and making continuous upward strokes from bottom to top, with the top of the silk screen tilted toward you at an angle of about 10°.

nish, six parts; China wood oil, two parts; add oil enamel to give the required body thickness. Colored oil enamel is preferable to white, as it shows up more readily when washing out with turpentine.

To coat the photographic silk screen with this protective coating, make a scraper or squeegee of very thin wood or stiff cardboard. Be sure that the working edge is perfectly straight and smooth. Add sides or wings to the scraper, as shown in Fig. 2 of the accompanying drawing. These wings are made of heavy parchment paper and cemented to the scraper and bent as illustrated. When using the scraper, hold it against the silk at an angle of about 60° (see Fig. 1) just so the material will run off on the screen easily. Also, tilt the scraper so that the edge will hit the silk at an angle of about 10° from horizontal, as at *C* in Fig. 3. This allows the excess fluid to run off one corner of the scraper, thereby eliminating streaks or puddles between strokes.

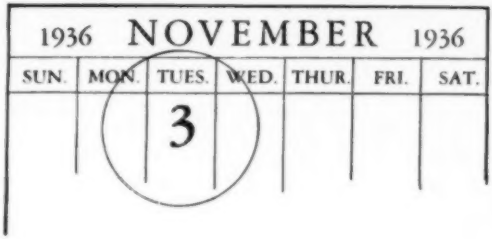
Coat inside of screen first. Start at left hand side and coat in vertical strokes, working from left to right. Tilt the right end of scraper edge downward (see Fig. 3) and make strokes from bottom upward. Let the strokes overlap a little so as to pick up what material runs off the right hand (low) end of scraper edge.

When you start coating, stand the screen at an agle of 80° (10° from perpendicular) the top leaning toward you, as in Fig. 1. Pour some coating material in bottom of screen and proceed as above. This protective or reinforcing material is heavy bodied enough for the coater to prevent it from running off the bottom of frame while coating.

Immediately after coating the screen, place the two short sides of frame on supports high enough to allow for washing out the open spaces in the stencil with a cloth wet with turpentine. Place screen on supports bottom side down. While the screen is in this position, wash the underside with turpentine. Don't have the turpentine rag dripping wet as this may be harmful to the edges of fine lines on the coated side—by forcing turpentine through the mesh and thinning the coating solution.

After washing the screen with turpentine, allow it to dry at least 12 hours so as to give the inside protective coating ample time to dry completely. When dry, place screen bottom side up, with one long side resting on the table, and coat crosswise with scraper, overlapping the strokes. Have scraper tilted as when coating the opposite side. Wash out openings in stencil with turpentine as before and allow 12 hours to dry.

The screen is now ready to print. Two or more applications of reinforcing material may be applied. This is governed by the amount of dye or material desired to be forced through the stencil. When it is desired to print in such a way that the dye or process paint completely penetrates the fabric, it is necessary to have a thicker stencil, thus forming a sort of reservoir of color that will seep through to the bottom side of the fabric. When a "through" print is required, pull squeegee more slowly over the stencil to make sure of depositing the required amount of material. All



A Momentous Day for America

The day of a national election is **always** a great day in the United States. This year, 1936, it is perhaps even more important than it has been in the past. Big issues will be decided by the election of November 3rd, 1936.

It has been said that no election since 1860 has had so great a bearing on the future course of this country, as will the election of 1936.

In the national election of 1932 there were 43 percent of those who had the right to vote who did not take the trouble to go to the polls.

The responsibility for the result of the election this year rests right on the shoulders of every individual man and woman who has the right to vote—and if **YOU** are entitled to vote, be sure that you let no sacrifice of time or inconvenience keep you from registering and voting November 3rd, 1936.

Vote!

strokes of the squeegee should be made at a uniform speed so the back of the printed fabric will show a uniform depth of color.

The photographic screen will not stand up on long runs as well as a stencil made by the "Tusche Method." Although the photographic stencil has been reinforced, one has to consider that the photographic solution is not immune to caustics. On long runs the edges of the stencil which are not reinforced will begin to crumble or break away.

After all, there are not many textile designs that are not originally drawn by hand, therefore the Tusche hand cut-in silk stencil is easily made by an expert with a brush. Tusche can be purchased ready to use from any photo-engravers' supply house.

It isn't worth while to try to remove a bicromated glue or gelatine stencil from the silk mesh, with the idea of trying to use the same silk again for making another silk screen stencil. Invariably the caustic percentage that is necessary to dissolve the light-affected bicromated stencil, has to be so strong that it will soon rot the silk. One may clean a screen thoroughly of the photo stencil, and the silk may look as good as new, but after going to all the trouble and expense of placing a new stencil on the silk, one finds, after a few pulls of the squeegee, that threads are breaking here and there all over the screen.

After all, the taffeta weave silk that is now on the market is so cheap that it is not an economical proposition to try and save the silk from a used screen. The number of meshes in the silk governs the price. The idea of the design governs the size or number of meshes to the inch that are necessary. The coarser the design, the larger the mesh, and the larger the mesh the cheaper the silk. Silk as coarse as No. 8, with 86 meshes to the inch, can be successfully used where the design is not too fine.

Metal Office Furniture

What an important factor finishes assume in the manufacture and sale of metal office furniture is emphasized by a publicity release sent out recently by The Globe-Wernicke Co., Cincinnati, Ohio. Interesting excerpts follow:

"As a result of the cordial reception given the attractive finish on our new Advance desks and tables by the trade, we have decided to

The finish—attractive, serviceable, durable; available in medium green, walnut brown and mahogany red.

make it available for other items of steel office equipment. It is an entirely new finish made possible by recent developments in the paint industry; will outwear ordinary finishes, does not easily scratch nor mar, and becomes harder and tougher with age; is now included in the standard finishes on our steel wastebaskets, desk trays and '5200' line of vertical suspension type files; may also be had on other items of steel office furniture without extra charge but subject to a slight delay in delivery. The new desks have a tough hard tempered composition top and sturdy construction."

HERE!

BERRY BROTHERS
MULTIFORM FINISH

● Now manufacturers and industrial finishers everywhere can obtain MULTIFORM FINISH—Berry Brothers amazing new product that makes unlimited two-tone effects available on any article *at low cost!*

MULTIFORM FINISH is easily applied to all surfaces—whether they be Masonite, metal, paper, or wood. No special equipment is necessary. Apply by ordinary spray method.

A complete, informative bulletin on MULTIFORM FINISH, together with specimen sheets, is now available. Send for your free copy. Get the facts about this revolutionary development in industrial finishing. Address request care of:

BERRY BROTHERS

PAINTS • VARNISHES • ENAMELS • LACQUERS

Factories: DETROIT, MICHIGAN • WALKERVILLE, ONTARIO

Branch Offices:

BROOKLYN, N. Y. • BOSTON, MASS. • PHILADELPHIA, PA.
CINCINNATI, OHIO • ST. LOUIS, MO. • CHICAGO, ILL.

Kindly mention INDUSTRIAL FINISHING when writing advertisers

Use the Proper Solvents

by E. A. Zahn
Works Laboratory, General Electric Co.

IN FACTORIES where a variety of paints are used, finishers often become confused as to just which solvent to use, as every paint manufacturer generally specifies his own special solvent. There are mainly three types of paints using three main solvents, such as weak petroleum solvents for oil paints and certain synthetics, special solvent mixtures for most synthetics, and lacquer solvents for all lacquers. Some finishers have learned that lacquer solvents will work for thinning all paints, therefore they sometimes use them improperly.

A lacquer solvent is likely to destroy the quality of an oil or synthetic paint, even though it seems to thin the paint as well as any other thinner. Besides the danger of losing the quality built into the paint, there is a very decided difference in the cost of these thinners, ranging from nine cents to more than $2.00 a gallon. It would be well for the finisher to figure the cost of his mixed gallon before making any guesses as to which solvent is the handiest to use.

A solvent is merely a means toward easy application of the material. After the paint has dried there is no trace of the solvent left, regardless of what its cost or quality may have been.

The fifth of a series of 20 short articles prepared by the author.

Information is always available at the material manufacturers' laboratories concerning the proper use and application of all materials, and it is the duty of every finisher or shop foreman to be able to make the correct mixtures on all paints, varnishes or lacquers used in his department. Many departments have posted in the paint storage room a chart that gives all correct solvents for use with various paints, as well as the thinning ratios. These charts are helpful and save time as well as money for the department, and will be supplied whenever requested.

Of course, emergencies arise when a faster evaporating solvent may be needed, and in such cases the cost of the thinner is not of too great importance. However, it is the duty of the finisher to get specific instructions from the laboratory as to just which solvent will be safe to use in that particular paint.

Solvents for baking materials must be of a suitable type to act properly in the high heat ovens. The cheaper or slower-evaporating types generally give better

A PHENOMENAL GUN

The Latest development of a Company that has been making Spray Guns Since 1893

the Gun: Smart Finishers Have Been Waiting For

Write or Phone for Free Catalog Containing Valuable Information

BINKS MANUFACTURING COMPANY

3114-3140 CARROLL AVENUE *Telephone Van Buren 6310* CHICAGO, ILLINOIS

NEW YORK	DETROIT	SAN FRANCISCO
126-30 Lafayette St. Phone: Canal 6-4642	2830 E. Grand Bl. Phone: Madison 7287	920 Harrison St. Phone: Sutter 5389

Philadelphia—Pittsburgh—Cleveland—Milwaukee—Boston—Los Angeles—Seattle—Windsor, Ontario, Canada

results for this work, as they do not "rush out" when they come in contact with heat. A fast solvent is very often the cause of solvent blisters on any force-dried surface. Solvent blisters extend through the entire film and can readily be seen without a glass.

One individual often requires more thinner in his paint than another, or rather he adjusts the paint to suit his individual fancy, with no apparent regard as to what the final results will be. A finisher should first find what the proper thinning ratio is and then proceed to adjust himself to the use of it.

Finishers working on a production conveyor system soon learn to use the materials supplied to them and, with this uniform system, it is not difficult to regulate thinning to get most efficiency.

Albert J. Ferbert Dies

A letter from The Ferbert-Schorndorfer Co., Cleveland, dated September 1, advises us of the death of Mr. Albert J. Ferbert, President of The Ferbert-Schorndorfer Co. since 1921. Mr. Ferbert was a bachelor 55 years old and belonged to a number of civic, fraternal and business organizations. He is survived by two brothers and two sisters.

Before helping to organize the firm of the Ferbert-Schorndorfer Co., Mr. Ferbert was associated at different times with the Sherwin-Williams Co. and Ohio Varnish Co.

Cleans Painted Surfaces

"Cleanbrite," a new paint cleaner announced by the Flexrock Co., 800 N. Delaware Ave., Philadelphia, Pa., is prepared by mixing it with water (1-lb. to 1 gallon) and wiping soiled painted surfaces with a cloth or sponge saturated in the Cleanbrite solution, then rinsing with clear cold water applied by cloth or sponge. The material is odorless and non-injurious to workmen's hands.

WHETHER YOUR PRODUCT OR EQUIPMENT CALLS FOR A FINISH FOR BEAUTY OR PROTECTION OR BOTH—THE ANSWER IS—

Larcoloid

THE PERFECT 1-HOUR DRY ENAMEL

LARCOLOID is the new sensational, 1-Hour Dry Finish that is sweeping the country with its amazing results.

Air-dry or force-dry, or bake at any temperature you specify. ***Larcoloid*** will give you an ideal porcelain-like finish — flat or high lustre — with adhesion and durability second to none.

No matter what your products — no matter what finish you have used, it will pay you to investigate Larcoloid, the perfect 1-Hour Dry Enamel that positively resists Acids and Alkali and is Alcohol-proof.

Your inquiry will promptly bring you an interesting answer.

Larkin Co Inc. PAINT DIV., Buffalo, N. Y.

Manufacturers of Enamels, Varnishes, Japans, Lacquers.

Refinishing Golf Balls

In reply to several inquiries received recently from individuals and small concerns, about how to refinish golf balls, we suggest the following:

Golf balls can be recoated by spraying, dipping or tumbling, but some experimenting will probably be necessary before the job can be performed satisfactorily or economically in a small way, with low-priced facilities. The result desired is a smooth thin coat of tough, durable, opaque white enamel—probably lacquer enamel as that will dry quickly, or a rapid-drying synthetic enamel.

To hold the golf balls for either spraying or dipping, we suggest using a number of 2-pointed spring tongs designed either like the one shown in the accompanying sketch, or open like sugar tongs. For spraying, the loaded tongs could be hung side by side from a rack or rod which should be arranged so that it could be turned to permit the operator to spray first one side and then the other to completely coat each ball.

The same or similar hooks could be used for dipping the balls into enamel, dipping them one at a time or several at a time, and then hanging them up for the enamel to dry. To prevent a drop or fatty edge from forming on the bottom of each ball, it is suggested that a few minutes after dipping, a workman carefully wipe the bottom edge with a soft brush to remove any excess enamel.—I. F.

Questions « Answers

Bar Top Oil Finish

Here are two replies to an inquiry that appeared on page 5 of August I. F.

The Repeal of Prohibition opened up a new legitimate sales field for suppliers of industrial finishing materials. Apparently the art of finishing a bar to a permanent brightly-polished surface had either been lost or forgotten, and no one seemed to know exactly what performance could be expected of either lacquer or varnish.

Alcohol-resistant varnishes and lacquers have been available for several years prior to Repeal, and these were recommended with reservations. Very late in the Prohibition era, buyers of hotel furniture were demanding an alcohol-proof finish, at least proof enough to stand the abuse of accidental spillage of liquor and highballs by guests in hotel rooms. This was followed with a demand for finishing milady's boudoir furniture with lacquer, varnish, or what have you, which would withstand the spillage of perfume, toilet water, liquid nail polish and polish remover.

AMAZING

RESULTS WITH

SPRUANCE QUALITY

LACQUER

SEALER

Thoroughly seals the pores of the wood and has the build on which the finest of finishes are produced. Dries quickly and sands easily without gumming. Leading furniture manufacturers are standardizing on this unusual sealer.

Write now for samples and full information.

SPRUANCE QUALITY

Specialists in the manufacture of wood and metal finishing products, Varnishes, Lacquers and Enamels since 1907.

The Gilbert Spruance Co.

RICHMOND & TIOGA STS.

PHILADELPHIA, PA.

Although recognized manufacturers of lacquers and varnishes were led to believe that the alcohol-resistant furniture finish would have some merit for bars, it was admitted that in bar service the conditions were much more severe than in the cases of hotel and bedroom equipment. When put into bar service the alcohol-proof finish indicated an early failure with the consequent expense of refinishing. It is singular however that the failures were not because of poor alcohol-resistance, but were in many cases traced to penetration of moisture underneath the finish. Bars showed bad spots at those points where the bartenders had done most of the mixing of drinks. Undoubtedly the edges of heavy glasses and barkeepers' implements had broken the film.

The answer to satisfying the requirements for this type of service is in using a very simple finishing system. The wood bar top may be stained and filled in the customary manner, followed with a very thin shellac coat; then sanded down heavily to prepare the surface for a finishing coat of paraffine oil. The moisture-proofing efficiency of paraffine oil for this type of work is improved by adding a small amount of vinegar. The mild acidity of the vinegar tends to emulsify the oil, thus facilitating good penetration into the wood. Very little vinegar is required—about a tablespoonful to a quart of oil. Two coats of the vinegarized oil are recommended. To keep the bar in condition after installation, the bartender should carefully rub the bar every night for several weeks with a rag moistened in the same mixture.

Concentrate*

*Advertise in the ONE magazine devoted exclusively to the interests of product finishing. Makers of industrial finishing materials wouldn't think of employing other than skilled sales and service men to represent them in the field—no part-time specialty men for them!

Likewise, use INDUSTRIAL FINISHING magazine as the only direct and economical approach to heads of product finishing departments. It has no divided interests; isn't compelled to circulate among other department heads because of a diversified advertising clientele.

CONCENTRATE—feature all finishing materials and new finishing equipment in the ONE product finishing magazine.

Someone with a view toward getting a higher build might try this system, but substitute boiled or a mixture of boiled and raw linseed oil. While a better build should result, it might not prove to be equally as moisture-resistant as the paraffine oil.—GREGGS PHILLIPS (Massachusetts)

I've had a good deal of experience with the old type bar finish. The old way was to stain the wood with oil or japan colors before applying the oil. The present way is as follows:

Stain the wood with permanent stain, any shade desired. This does not raise the grain, and a good one will not fade in color nor will the oil pick up any color like it does on oil and japan colors or oil stains. Dry the stain from a half hour to several hours, according to conditions under which this work is being done. Then apply the first coat of oil.

This oil should be boiled linseed oil, and it must be applied hot. One coat of this hot oil is to be applied each day until five coats have been applied. Leave the last coat 24 to 48 hours; then polish with a soft cloth until all grease has been removed and until the work takes on a fine polish. I've seen lots of this work done, and it is lasting. The oil will fill most of the pores unless the wood is very open.

Now about the preparation of the boiled linseed oil: This oil must be real hot and must be heated over an indirect fire or over a steam pipe—any way at all, but do not set the oil can on the fire.—ORRIE D. MAAL (Calif.)

For Over 40 Years
Manufacturing Quality
GOLD and SILVER
Colored Bronze Powder
Write for our booklet—"The Why and How of Bronze Powder"
The O. Hommel Co., Inc.
Pittsburgh, Pa.

Cellulose Acetate . . . Burnproof?

Mr. George A. Endom's comment on cellulose acetate as burnproof is enlightening. I am glad his comments were published. The remarks I made on this subject (June issue, pages 5, 6, 7) were, of course, based upon my experiences in trying to supply a suitable burnproof finish. These experiences were confined chiefly with the wood finishers. In a most friendly way, I disagree with Mr. Endom that cellulose acetate is not burnproof but merely fire-resistant. As pointed out in my article, so great a quantity of combustible plasticizer is necessary to make acetate sufficiently flexible for a finish that the virtues of the non-burning feature of acetate are lost.

The fact that acetate is recognized as a low-burning rate material is well established in the 16mm amateur movie field. All film in this field is of the recognized safety type and is made from cellulose acetate. I will grant that this type of film can be burned, but unlike the nitrate film used for commercial production, it does not explode nor propogate combustion.

Please do not mark me down for a "die hard." I do believe, however, that the differences of

A Beautiful Blonde

maple finish

Worth investigating! A new finish that brings out the full beauty of maple. Easily applied without exacting judgment or manipulation.

Simply apply one spray coat of L-Mac-E Blonde Maple Coating No. L-266. Allow 2 hours for drying, lightly sand with No. 5 or 6 paper. Next apply two or three coats of L-Mac-E water white lacquer, No. L-1032. Rub and wax with L-Mac-E blonde maple wax, No. 779. Write for sample panel or free working samples.

The Lawrence-McFadden Co.

1400 Frankford Ave., Philadelphia, Pa.
427 W. Erie Street, Chicago, Illinois

AN EXCELLENT GENERAL SOLVENT

Economical and Convenient to Use

SOLOX

USI PROPRIETARY SOLVENT

REG. U.S. PAT. OFF.

Solox dissolves all spirit soluble gums for Shellacs, Shellac Substitutes and for Spirit Varnishes

U. S. INDUSTRIAL ALCOHOL CO.

60 EAST 42nd STREET
Branches and Warehouses in All Principal Cities

USI

NEW YORK, N. Y.
World's Largest Producer of Alcohol Solvents

opinion between myself and Mr. Endom exist wholly through the fact that our respective fields of experiences do not have the same common denominator.—GREGGS PHILLIPS.

Blued Steel Effect

A nearby manufacturer, for whom we have solved several problems, has come to us with one for which we are certain you can give us the needed information.

This company is finishing a number of small metal blocks about 4-in. long and ½-in. square. These are of bright bent sheet metal and are finished by dipping to give them a blued steel effect.

At present they are using a shellac solution colored with leads taken from indellible pencils, which are dissolved and used to color the shellac solution. This has been a makeshift proposition, as they have not been able to locate suitable coloring material at several wholesale houses, who advise that it is not obtainable.

We know this is not correct, as I have used considerable dye a long time back, but I am not acquainted with present sources of supply and wish you would be good enough to tell me where permanent color alcohol and naphtha dyes of purplish deep blue may be secured. My thought is to use some quick-drying hard synthetic varnish instead of shellac, and I will appreciate your suggestion as to where both color and varnish may be secured at reasonable cost.—N. D. R.

These pieces could be finished as follows: Apply one dip coat of clear metal lacquer, with the addition of semi-transparent blue enamel.—G. KLINKENSTEIN, Technical Director, Maas & Walstein.

We suggest, as a source of supply for aniline dyes to be used for the staining of steel, either the National Aniline & Chemical Co., 40 Rector St., New York City, or the American Aniline Products Co., 50 Union Square, New York City. Either of these companies should be able to supply your correspondent with practically any shade of dye required.

The writer has made a few experiments with such dyes as we had on hand here at the factory. We have several bluish black dyes that seem to simulate the blued steel effect which your correspondent desires. The best of the limited number we have on hand seems to be No. 19821 Oil Black Bluish, produced by the American Aniline Products Co., Inc. This gives a distinctly bluish cast similar to that of indelible leads, and appears to be a good simulation of blued steel. However, it is likely that an even better shade can be obtained by getting into direct touch with either of the two companies mentioned above.

Any of these alcohol-soluble dyes can be used with either shellac or varnish to give the proper tint.—A. F. BYERS, Benjamin Franklin Paint & Varnish Co.

Paint Brush Catalog

Catalog No. 36, size 8½x11-in. with 4 pages of double column descriptions and illustrations on paint brushes, artist and sign writers brushes, and industrial brushes of every type, is now available for mailing by David Linzer & Sons, Inc., 10 Astor Place, New York, N. Y. Catalogs will be forwarded to those requesting them by mail, on business stationery.

What's New « «

Portable Paint Sprayer

Development of a new rubber-tired portable paint-spraying unit, adaptable for both interior and exterior painting and for light-duty touch-up and refinishing work, is announced by the Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill. The unit is designed to fit needs of master painters, decorators, building contractors . . . for maintenance work and for service repair departments of refrigerator, radio, automotive and furniture dealers.

Mounted on a wheeled base, the unit consists of a ½-h.p. electric motor, an air compressor unit, a 2-gal-

The entire outfit weighs 180-lbs.

lon capacity pressure tank, a standard Binks bleeder type spray gun with adjustable nozzle, and various lengths of rubber hose. The spray gun furnished with the unit is a Binks Thor Model 6B gun, recommended for touch-up and fine finish work. An alternate spray gun with a flat nozzle or round and angle sprays can be used for maintenance work.

The compressor unit is of 2-cylinder, air-cooled type; has a working pressure of 45-lbs. and is driven by a V-belt from the electric motor. The air chamber is equipped with a drain cock and safety valve set at 60-lbs. pressure. The chamber serves as an oil and water extractor, also.

The pressure tank is equipped with one air pressure regulator and gauge, and a safety valve set for 60-lbs. pressure. Three lengths and types of hose are provided, including a 25-ft. length of air hose from the compressor to the tank, a 12-ft. length of ½-in. air hose from the tank to the gun and a similar length of ⅜-in. material hose and connections to go from the tank to the gun.

Air-Dry Enamels for Iron and Steel

A new line of air-drying enamels, especially designed to prevent the corrosion of iron and steel in railroad, marine, mining, oil, and general industrial service, has been developed by Mass & Waldstein Co., makers of lacquers and lacquer enamels, Newark, N. J.

These new anti-corrosive enamels are made of rust-inhibiting pigments and a synthetic resin vehicle, and form a hard, tough coating that is resistant to wear and of pleasing appearance. Exposure tests, conducted for a long period of time, show that they are particularly effective in providing protection from the corrosive action of humidity, salt water, alkali, and a variety of chemicals, and in preventing electrolytic action, according to the manufacturer.

A single coat gives adequate protection where the exposure is not prolonged or severe, but for maximum protection two coats are recommended.

These new enamels can be applied by either brush or spray. They air-dry in four hours and are hard overnight. Types for baking for one

RAYON FLOCKS

of finest quality for
SPRAY
FINISHING

- Uniform Lengths.
- Dyed to any shade.
- Write for samples.

CLAREMONT WASTE MFG. CO.
CLAREMONT, N. H.

The Country's Leading Makers

M S A Comfo - Respirator
(U. S. Pat. 2019028)

Sure protection against microscopically fine dust . . . only a trifle over 5 ounces in weight.

M S A Comfo-Respirators, officially approved by U. S. Bureau of Mines, combine exceptionally low breathing resistance and light weight with easy, snug-fitting adjustment and absolute non-interference with goggles, etc. Men CAN and DO wear them all day long without complaint. Equally important, Comfos provide the best available protection against all industrial dusts, the longest service life per filter and the lowest filter replacement cost. Investigate these proved dust respirators — write for Bulletin CR-3, or ask for a demonstration.

MINE SAFETY APPLIANCES CO.
Braddock, Thomas & Meade Sts.
PITTSBURGH PENNA.

hour at 250° to 350°F. can also be supplied. They cover approximately 350-sq.ft. per thinned gallon. Available colors are brown, black, red, and a bronze liquid, which serves as a vehicle for aluminum and other metallic powders.

"Water-Stainfill"

V. J. Dolan & Co., Inc., 1830 N. Laramie Ave., Chicago, Ill., announce the perfection of a new and radically different product for furniture manufacturers. Under the name of "Water-Stainfill," the Dolan Company is marketing a product for which they make many claims and offer to demonstrate and prove. Water-Stainfill is a mixture of pure water-soluble aniline colors in conjunction with a liquid pigment filler. This makes possible water staining and filling in a single application; a clear clean, light-fast, quick-drying, non-grain-raising combination with sufficient filling properties to serve any ordinary requirement.

It is claimed this new product wipes as easily as the average pigment stain, and dries for coating within two hours. Being confident of the merit in this new product, V. J. Dolan & Co. offer to match any panels submitted, provided applicants furnish some panels of their own wood in the white, on which to produce the match.

An Under-Water Finish, Coppr Black

Two materials have always been considered of vital importance for the protection of boat bottoms and other surfaces subjected to the destructive chemicals and living marine pests found in the ocean depths.

The first of these, known through the ages, is copper. The second, in various guises and solutions, is coal-tar base applications. One form of the latter, used by the Norsemen

No Matched Lumber Headaches . . . No Knot Problems

SEND FOR FREE SAMPLE

EQUALIZER AND

Absolute *TONER*

OR 5 GAL. EACH AT DRUM PRICE

1. Produces uniform finished case from unmatched lumber—covers all dark sap streaks and knots.
2. Does not injure grain or texture.
3. Gives clear transparent fast-to-light finish.
4. No special skill required to spray.
5. Does not contain dangerous caustic or bleach.
6. Is now being used by leading manufacturers.
7. Reduces material costs and saves time.

Woodfinishing Products Company

The only manufacturer of *Absolute* Products

34-38 INDUSTRIAL STREET
NEW YORK, N. Y.

527 WAUGHTOWN STREET
WINSTON-SALEM, N. C.

Leoline **Good "Build"** Leolac

is one of the many qualities of LEOLAC LACQUER WOOD SEALER No. 66

Leoline—Paints and Enamels

Leolac—Lacquers Leosyn—Synthetics

LEON FINCH, LTD.

Office and Factory
750 EAST 59TH STREET
LOS ANGELES, CALIF.

Warehouse and Sales Office
1311 MISSION STREET
SAN FRANCISCO, CALIF.

Kindly mention INDUSTRIAL FINISHING when writing advertisers

SUNBRITE BRONZE POWDERS

Offer Many Advantages to You — "Investigate"

There are so many beautiful and attractive finishes available in Bronze Powders every manufacturer should investigate the economy and greater eye-appeal of Sunbrite Metallic Finishes.

May we send a color card and complete information, or, we will willingly finish a small part of your product. No obligation, of course. Send it, today, please.

The Mitchell-Mayer Co., Inc.

ST. LOUIS, MO.

Complete Industrial Bronze Powder Finishes

the JETAL process

A Simple Way to

BLACKEN Iron and Steel

The Jetal process colors iron or steel at low temperature, *by immersion*, to a uniform and brilliant black. It is a complete finish in itself, and will not chip, scale, peel or discolor — also an excellent bond for subsequent finishes that require high temperatures. Ask for circular and send samples to be JETALized.

ALROSE CHEMICAL CO.

Executive Offices: 80 Clifford St.

PROVIDENCE, R. I.

and handed down to the present day in a slightly different form, is known as "Stockholm tar."

A method of combining the two materials has been developed and, with the addition of three separate oils, a test-proven product called "Coppr-Black, that adheres tenaciously, seals against moisture absorption, and actually destroys boring and clinging marine pests, is now available.

In actual service for seven months, a 40-ft. sloop, upon removal from the water, presented an appearance of only slight deterioration of the finish. Whereas formerly over a bushel basket of barnacles had to be removed, there was only about one pint of these destructive pests clinging to the bottom of this boat. Also, where the bottom had scraped against a submerged obstruction and had been damaged by scoring, the finish had not flaked or peeled at the edges of the damaged section. It was noted that enough penetration into the wood grain had been secured to definitely preserve the planking.

Information as to the various uses, in addition to boat bottoms where Coppr-Black is considered ideal, can be secured by writing to the Engeom Process Corp., 77 Lexington Ave., New York, N. Y.

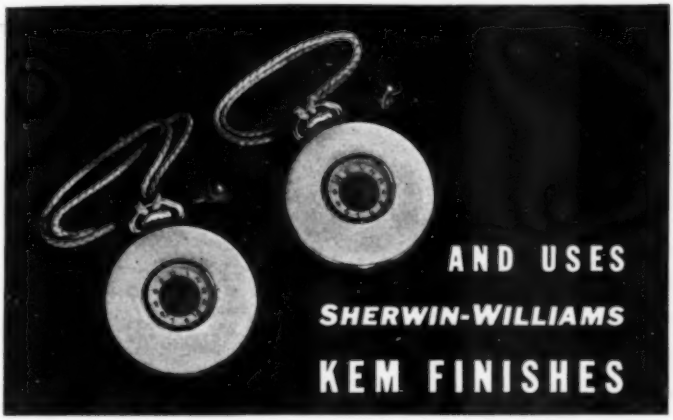
Black Coating for Shell Caps

The North Bergen Varnish Corp., 1001 39th St., North Bergen, N. J., announces "Berco Black Coating," particularly designed for manufacturers and users of double shell caps, tobacco tins and all products requiring a very severe draw.

Outstanding features of this new product are its density, brilliance and hardness; covers tinplate solidly in one application.

A typical sample tinplate cap was given the following cycle of operations: 1) Coated with sizing varnish and baked at 300°F. for 17 minutes;

INGRAHAM SCORES A BEST SELLER



Ingraham's new Lapel Watch—a creation by Aristocrat Clock Company, New York—is eclipsing all sales records, and its smart new cases are given the durability and rich beauty of Kem Baking Enamel in a high gloss, and Kem Art Metal Finish in a fine, even texture.

These finishes are so easy handling, so uniform in quality and results, H. S. Products Finishing Company, Brooklyn, New York, is able to finish over 4000 complete watch cases per hour by special automatic spray equipment, and thereby brings the cost of production well below that possible where less highly developed materials are used.

Let the S-W Finish Engineer help you solve your problems. Write the Sherwin-Williams Co., Cleveland, Ohio, and all principal cities.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

3 AIDS TO INDUSTRY

A better job with less time, labor and money is the function of these masking tapes. Perfect in all weathers. Remember . . . a great name stands behind them.

PERMACEL

in "tops" in paper masking tapes, with precision edges for easy, accurate color separation. Weather and lacquer resistant.

JONFLEX

Duplicates Permacel . . . but with fine woven cloth backing instead of paper.

INDUSTRIAL

Differs from Jonflex only in that its cloth backing is heavier, stronger, coarser in texture.

Send for free samples

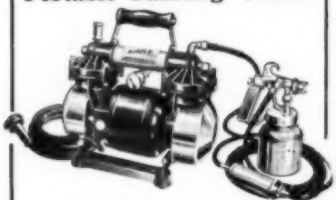
THE REVOLITE CORP.

A Subsidiary of Johnson & Johnson

NEW BRUNSWICK NEW JERSEY

CROWN AIRFLO

Portable Painting Outfits



Crown Airflo outfits have ample capacity to handle lacquer, synthetics and all modern finishes with speed, economy and satisfaction. Compressors operate without oil, insuring CLEAN air at all times—fewer moving parts—blower-cooled G-E motor . . extremely portable. Greater pressure and volume per motor horsepower guaranteed. Send for details.

Crown Spray Gun Mfg. Co.

1218 Venice Blvd., Los Angeles, Calif.

Warehouses in Principal Cities

2) the black coating was applied and the sheet baked again at 300°F. for 17 minutes (film thickness about 10-mm.). The tinplate was then fabricated.

Fluid Nozzles and Atomizer Heads

The Paint Spray Equipment Division of the Alexander Milburn Co., 1493 W. Baltimore St., Baltimore, Md., announces major improvements in atomizer heads and fluid nozzles

Details of new nozzles and atomizer heads.

for the company's latest paint spray guns. According to the announcement:

The fluid nozzle is an improved design and incorporates features which make it more efficient and economical for spraying various materials. It is made of a special grade, wear-resisting steel with long tapered seat, accurately machined and burnished for perfect alignment

with atomizer head. Generous air passages, closely spaced, provide a large annular air supply to the atomizer head, resulting in a perfectly atomized spray. The internal tapered seat is finished to exacting specifications, allowing the paint needle point to seat accurately and prevent dripping or spattering. One particular feature is that the nozzle seats on the base of the thread of the head which keeps paint or other material entirely out of the threads eliminating any clogging. . . .

The bronze atomizer head is of simple, one-piece design, precision made with straight air passages eliminating friction and rendering it easy to clean. Perfect alignment of seats is assured. Ample air requirements are provided by large nonfrictional air passages and expansion chambers which increase the velocity and volume and produce fine atomization at lower pressures.

These new fluid nozzles and atomizer heads are manufactured for siphon or force feed, and in sizes and styles to handle any type of material from the finest lacquer to the heaviest synthetic enamel.

Marking Paint

The manufacturer of "Markal," said to be the first paint in stick form, has just announced a new nickel-plated metal holder which makes Markal easier to use, and enables the operator to use the stick right down to the end.

This metal holder is furnished without charge, one being included in each package of 12. It is made of flexible steel and slips right over the paint stick, with a fit just snug enough to hold for use in marking. As the stick wears down, it is pushed through the holder with the thumb or finger. The holder enables the workman to use practically all of the stick instead of throwing away the stub.

Markal is marketed by Helmer & Staley, 2597 So. Park Way, Chicago.

Silk-Screen-Supplies Catalog

A new illustrated catalog (No. 436) of silk screen supplies, listing more than 300 items ranging alphabetically from acid-proof filler to wire stretchers, has just been published by the Prairie State Products Co., 1631 S. Michigan Ave., Chicago, Ill. In addition to listing, illustrating and describing all of these supplies, this book gives some timely information about silk-screen process printing. It contains 48 pages, 6¾x10¼-in., bound in heavy paper covers.

We originated "BLONDE" Wood Furniture Finishes

BLANCHIT

Reg. U. S. Pat. Off.

L. R. Van Allen & Co.

Inquiries—Box 3610 Merchandise Mart Sta.

CHICAGO

WALKER'S

FURN-I-LAC FURNITURE FINISHES

The Emblem of QUALITY in Finishes

MODERN IMPROVED PRODUCTS—including Sanding Sealers, Flat Lacquers, and Gloss Lacquers. Uniform, dependable; they have excellent building qualities, producing high class work. Used also for medium priced furniture and radio cabinets.

Request sample for testing on your products. Write today.

H. V. WALKER CO.

ELIZABETH, N. J.

Letters from I. F. Readers

(Continued from page 6)

We would appreciate it very much if you would advise us the name of a company furnishing this type of finish.—Pulp Products Co. (Seamless Containers).

Novelty Designer Wanted

I have assumed charge of a small woodworking business in a college town. Our aim is to give college students employment. We are thinking considerably of branching off into novelty manufacturing. We believe that, since this is a distinctly Dutch community, we can advantageously feature a Dutch touch to our products.

One of our principal problems is to contact a good novelty designer, one who could help us develop such novelties. Could you refer us to such a designer? Any other helpful information you may be able to refer to us will be appreciated.—Earn-Your-Way Corporation.

Spray-Booth Lining

Your journal has brought before our notice the material, known as "Kelsanite" suitable for spray-booth flushing. Will you kindly advise the name of the manufacturer, or further advise the manufacturer of our inquiry. We would appreciate receiving this information as soon as possible. The material mentioned above is shown in the issue of August, 1935, on page 12.—A. Hale & Sons, Sth. Brisbane, Queensland, Australia.

Kelsanite is a product of Kelsan Products Co., St. Clair, Mich.—Ed.

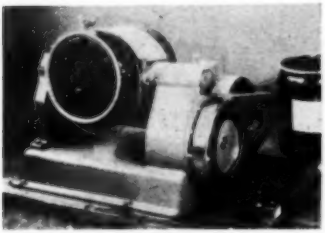
Glass Beads; Golf Paint

We notice in the August issue, pages 6 and 7, two letters from readers which are interesting to us, and we would appreciate receiving further information from you, especially the names and addresses of these parties.

The one letter is signed by "S. R. Co.," referring to small glass beads, and the other signed by "G. L. P." is an inquiry for golf ball finishes.

We have been supplying glass beads in crystal as well as colors for a great number of years, and we manufacture the "Jiffy Golf Ball

Rejuvenates 5-gal. cans of Paint, etc., in 3 to 10 minutes without opening the can



No matter how much or how long finishing materials have settled, from lack of use, the "Miracle" will restore them to their original consistence in a few minutes. Noiseless in operation—clean to use. Smaller machines for smaller cans also available.

Miracle Paint Rejuvenator Co., Inc.
459 Robert Street St. Paul, Minn.

Pyroxylin Lacquers — Synthetic Enamels — Insulating Varnishes—Baking Enamels

IMPERVIOUS PRODUCTS
FOR INDUSTRIAL USE
IMPERVIOUS VARNISH COMPANY
KOPPERS BUILDING, PITTSBURGH, PA.

Protective Coatings — Finishing Varnishes—Primers and Surfacers

ENAMELS · IMPERVIOUS · LACQUERS · VARNISHES · TRADE MARK · NO PRODUCTS

Paint," a patent material which we manufacture under a subsidiary, Pittsburgh Economy League. — The O. Hommel Co., Pittsburgh, Pa.

Reflector Buttons

We note in the August issue, pages 6 and 7, that the "B. W. Co." is interested in securing the name of a company manufacturing reflector buttons. We are manufacturers and own or control the patents on our Fireball Reflector Buttons, as illustrated in our catalog.—The National Colortype Co. (Reflecting buttons, signs and signals, highway markers and traffic signs) Bellevue, Ky.

"Morlux" Lacquer

If you know of a paint manufacturer marketing a lacquer under the trade name of "Morlux," please have them wire us at once, as we have an opportunity to close a large contract for them.—K. G. C.

"Morlux" is a trade name used by the Morris Paint & Varnish Co., St. Louis, Mo.—Ed.

Burnishing Piano Plates

Can you give us a formula for burnishing on metal, also wood? Our piano plates, which are made of cast iron, are finished in bronze and we are desirous of burnishing some of the high points in this plate. We will appreciate any information you can give us.—N. A. I. Co. (Pianos).

Black Finish for Brass Pencil Bands

An article appears on pages 56 and 57 of the March issue entitled "Black Finish for Brass Pencil Bands," and signed "B. E. A."

Will you please put me in touch with this party, as I am in a position to help him—either in doing the enameling for him or else prescribing a proper procedure, design of oven and the enamel. I have in mind an absolutely new foolproof product. When applied according to instructions, it can be hammered and bent, sawed or cut without coming off or chipping; it equals the wearing qualities of the metal. It resists sulphuric acid, hydrochloric acid of any

(Continued on page 65)

FLOCKS

Wool - Cotton - Rayon

- IN ALL COLORS
- FOR ALL EQUIPMENT
- FOR EVERY PURPOSE

Skilled chemists in our research laboratory are at your service. Let us help you develop or reproduce that special effect or color tone. Send us a sample or description of what you need.

MYERS - LIPMAN
Wool Stock Co., Inc.
283-287 W. Broadway
New York, N. Y.
Pioneer Manufacturers Since 1875

Furniture Finishing

A thoroughly practical book in five parts.
I. Period Furniture and modern styles.
II. Furniture Decoration (Antique Shading, Glazing, etc.)
III. Furniture Finishing (Woods, Finishing Room Tools, Equipment, Materials, etc.)
IV. Furniture Patching.
V. Special Processes (Lamp Shades and Bases, Picture Frames, Japanning, Mirror Resilvering, etc.)

543 Pages—Fully Illustrated
Good Binding—Price $5.00

Remittance with order

INDUSTRIAL FINISHING
222 E. Ohio St. Indianapolis, Ind.

Industrial FINISHING

Distributed to Executives and Foremen Finishers in industrial plants where finishing coats are applied with finishing equipment

Published the 18th of each month by PRACTICAL PUBLICATIONS, Inc. 222 East Ohio St., Indianapolis, Ind. Telephone ..... Riley 6771

•

President ..... A. T. Gaumer
Vice-Pres. and Editor ..... W. H. Rohr
Treasurer and Adv. Mgr. ..... E. A. Dosch
Secretary ..... R. E. Suits

•

Subscription Rates Per Year
U. S. and Possessions $2.00
Canada and Foreign Countries $3.00

EDITORIAL

Honest Foremen Who Can Manage Men

These two requirements—honesty and the ability to manage men—rate first and second place respectively in what most modern manufacturers expect of their finishing foremen. Practical and technical knowledge and experience are highly important, but a man with these two latter qualifications will be dismissed immediately if he is found to be in the least bit dishonest or lacking in the ability to manage men.

Company executives are taking greater interest in their finishing operations and maintaining a closer watch upon results produced by the foreman in charge. The foreman that can be trusted is in greater demand today than ever before.

To compensate for the honest foreman's possible lack of experience and technical knowledge, management calls in service men and other experts from time to time—men from the suppliers of finishing materials and from concerns that have furnished equipment. Also, management buys technical books for the foreman, subscribes for the outstanding finishing magazine, and writes letters of inquiry to well known authorities for specific information. Eventually the foreman acquires experience and practical knowledge and becomes more valuable to the company than any other type of man could possibly hope to be.

Rubbing; Buffing

Notwithstanding the fact that portable air-driven rubbing machines are available as a proven and satisfactory product, there is still considerable hand rubbing being done in finishing departments and paint shops. After seeing some of the long slow strokes that hand rubbers make while at work, this idea comes to mind: Why not make a slower longer-stroke rubbing machine for use on the larger surfaces? It might mean slower performance than what could be done by an expert using a rapid reciprocating short-stroke machine, but it could be much faster and less fatiguing than hand work—and

what's also important, and there would be less danger of "burning" or rubbing through the finish; and the machine, operating at less strokes per minute, could probably be kept in service longer without any renewal of any worn parts. Of course, this is merely a suggestion based upon a supposition.

Another point in reference to rubbing machines is the continually insistent demand for a small portable reciprocating rubbing machine that operates by electric current. Electric rubbing machines are particularly desired by small concerns where there is either no compressed air available or where the compressor capacity is necessarily limited.

Rubbing or polishing furniture with a rotary disc, as is done in the automotive industries, doesn't seem to be entirely satisfactory. At any rate it isn't being done extensively, or even in a small way so far as we can learn. However, buffing and polishing on the rim of a specially prepared buffing wheel is an interesting possibility which is discussed in considerable detail in a feature article elsewhere in this issue of INDUSTRIAL FINISHING. Undoubtedly considerable experimenting will be done along the lines outlined by the author, Mr. W. T. Smith, who limits his operations, for the time being, to small work that can be readily presented to an 18-in. wheel mounted on a fixed arbor. Of course, in the metal plating and finishing industries buffing is quite commonplace—an entirely satisfactory and economical operation to produce a smooth mirror-like lustrous surface. The idea deserves investigation by wood finishers.

Air Conditioned Finishing Room

Dreams do come true. For example, witness today the many comfortable air-conditioned theatres, department stores, restaurants, hotels and trains—only a fantastic dream a few years ago. But of all the interiors that should have real air-conditioning, where do we find the need greater or more worthwhile than in the modern finishing room or paint shop? A dream once, but it's materializing into reality more rapidly than you may believe.

Just recently the Editor had an opportunity to visit a newly-outfitted completely air-conditioned finishing room. The interior is finished in aluminum paint, doors are self-closing, windows are padlocked shut, and well-placed air ducts release clean filtered air which is properly conditioned as to temperature and humidity. Air to replace that which is blown out by spray-booth exhaust fans is drawn in from the outside through filters and other conditioning apparatus, and distributed throughout the department by sheet-metal ducts.

This is a very recent installation and, inasmuch as it represents some pioneer work in the matter of getting everything properly balanced, some parts of the system were not operating 100% at the time of the Editor's visit. However, there is every assurance that it will work satisfactorily and thereby make this finishing department one of the most uptodate in the country.

The management of the plant has given permission for an illustrated descriptive write-up of this new air-conditioned finishing

room to appear in INDUSTRIAL FINISHING magazine. The system provides clean fresh air of correct temperature and humidity, gives adequate circulation, and automatically replaces the exhausted air. It represents a real step forward.

Blonde Finishes

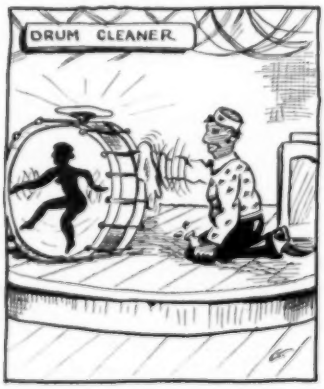
The period of popularity for blonde finishes in wood furniture and fixtures is here. How much it may increase, if any, or how long it will last, are matters of speculation. Like the lighter colors for automobiles, blonde wood finishes offer a pleasant change from a long period of dark finishes.

Blonde finishes for wood may be obtained in either one or two ways, that is by using natural light colored woods like maple, ash, primavera, etc., or by bleaching the color from dark cabinet woods such as gum, walnut, oak and mahogany. Even when natural light colored woods are used, more or less bleaching is generally necessary to bleach out certain original stains and dark places in the wood to obtain a uniformly even light color. To pull the natural color out of dark woods requires heavy bleaching—often repeated applications with a strong bleaching solution.

Several effective bleaching compounds are on the market. These must be used carefully, according to the manufacturer's directions, in order to obtain satisfactory results.

The finishing materials applied to these bleached surfaces, after the wood has been carefully smoothed by sanding, include clear sealer and finishing coats of shellac and varnish or lacquer sealer and lacquer.

Inasmuch as blonde finishes call for transparent coatings on light colored woods, more than ordinary care and skill are required along with high grade finishing materials. Any defect or slighted work will show up clearly in the work. More "build" is required in the finishing coats to give depth to the finish, and more rubbing is needed to give a professional touch to the final job.



Lindol Prices Raised

A letter from the Celluloid Corporation, 10 E. 40th St., New York, N. Y., states that effective August 15, prices on Lindol grades will be advanced $.02 per pound to the following price schedule:

Amt.	Lin. M. P. C. P.	Lin. A. Tech.	Lin. C. Tech.
L. 500	$ .46½	$ .35	$ .33
1 D.	.36½	.25	.23
C. L.	.32½	.23	.21

These are prices per pound on the three grades of Lindol (M. P., chemically pure; A, technical; and C, technical) f. o. b. destination in U. S. A., according to the amounts designated above as L. 500 (less than 500-lbs.) 1 D. (one drum or 500-lbs. and over) and C. L. (car load).

Advance in raw materials costs necessitates this increase in price.

Finishing Room Fires

I HAVE IN mind a fire that occurred in the factory of a firm using a tunnel oven for baking their black japanned ware. The oven was equipped with manually-controlled gas burners. Temperatures in the oven at different points were shown on a dial near the unloading end of the oven, and the man doing the unloading checked the heat. This worked satisfactorily for several months; but one day, through carelessness, the unloader let the temperature crawl up too high, and flash! He had an oven on fire.

The shop was well supplied with hand fire extinguishers and, by working from both ends, the crew soon had the fire put out. But in the meantime an alarm had been turned in and some of the city fire apparatus arrived. Inasmuch as the fire was out, the foreman told the chief he wouldn't need him. However the chief ordered a length of chemical hose unrolled and calmly told the bewildered foreman that within 15 minutes his exhaust stack would "go up." These precautions were well taken. In less than the stated time, the stack was afire, but the chemical hose made short work of it.

In this instance the damage was confined to the load of articles hanging in the oven, and was of comparatively small amount. However, had the fire in the stack been unsuspected and unknown to the foreman and his crew, it might have ignited the tar-paper roof and caused a total loss of the plant.

This firm no longer depends upon manually-controlled gas-burners or a "watched dial." They have installed an electric contact which blows a warning horn at 450°F. This is the signal for anyone within hearing to shut off the gas. If this is not done promptly the sprinkler heads on the carbon dioxide installation cut loose at 490°F. and smother the fire with carbon dioxide gas. Over the dipping tank another container of carbon dioxide gas, with a heat-releasing valve, is installed to smother a possible fire at this danger spot.—W. S.

Letters from I. F. Readers

(Continued from page 61)

concentration, and nitric acid 30%; caustic soda up to 4%, and any concentration of sodium carbonate, ammonium hydrox and ammonium compounds, as well as saline solutions, sodium hypochlorite, as well as quite high heats. I will gladly finish samples and maintain the standards set up in the samples.—W. H. S.

Veiling Lacquers

Can you give us the names of manufacturers of splatter, veiling and stipple lacquers? We are looking for these materials for use in our manufacturing of dinette furniture.—B. & C. (Furniture).

Who Makes "Corolith"?

There is or was a product on the market called "Corolith" or "Korolith"—I am not certain as to the spelling. This material came in sheets like glass. I am eager to get in touch with the manufacturer, as I have an idea of a sign where this product would answer all requirements.—L. R. H.

U. S. Finishes

Will you be kind enough to advise us where we can obtain information as to how to produce the finishes on brass hardware in accordance with the specification U. S. 1 to 30, inclusive? We have received a number of orders in which U. S.

10 and U. S. 11 finishes are specified, and we would like to have on file in our office information pertaining to all of these U. S. finishes, as the demand arises.—K. & B. Co. (Brass, Bronze and Aluminum Castings).

Classified Advertising

Advertisements under this heading 45 cents a line per insertion, minimum charge, $1.35. In estimating, calculate six words to one line, and add one additional line for heading. Use this department to obtain help, find positions, buy and sell equipment, dispose of manufacturing properties, etc.

FOREMAN FINISHER

Desires to make change. Now employed. Age 36. Fifteen years' experience on bed room and dining room furniture. Good color and production man. Can also run cabinet room. A-1 references. Go anywhere. Address IF-628, care Industrial Finishing.

EMPLOYED COLLEGE MAN

Qualified for sales service, industrial selling or control technician. Eighteen years' experience. Six years with internationally known industrial concern in charge inspection of all finishing materials. Address IF-630, care Industrial Finishing.

POSITION WANTED.

Finishing foreman and Finisher experienced in all kinds of finishes on wood and metals, air drying and baking. Handle any number of men. Latest methods of production. Chemical experience of materials. Best references to Character, Mechanical and Executive abilities. Salary open. Go anywhere. Address IF-632, care Industrial Finishing.

SALESMAN WANTED

Experienced salesman with following to sell complete line of wood-finishing materials in Pennsylvania and Virginia. Straight commission. House accounts will be turned over to right man. Address IF-633, care Industrial Finishing.

FOR SALE.

Francis roller glue coater and glue mixer—$150.00. STANDARD COLOR & CHEMICAL CO., 42-09 9th st., Long Island City, N. Y.

FOR SALE OR LEASE.

Furniture Factory located in the center of the United States. Exceptional bargain. Everything necessary for Furniture Manufacturing, making Fixtures or Planing Mill, at your door. Address 629, care Industrial Finishing.

SALESMAN WANTED.

Spray painting equipment manufacturer has several territories open. Give complete details including experience, age, references and remuneration expected. Address IF-631, care Industrial Finishing.

LOOK HERE, SALESMEN!

Paint and Varnish Manufacturer with low overhead will divide profit over raw material cost, equally with salesman that can produce volume. Write FRANK GILL COMPANY, Wisconsin Rapids, Wis.

WE WANT A MAN—

Middle-aged, to make stains, fillers, sealers and lacquers. Must be up-to-date. Give reference and salary expected. Address IF-627, care Industrial Finishing.

SERVICE MAN WANTED.

Established manufacturer of wood and metal finishes requires service man for testing out finishes and developing new finishes on wood, also to demonstrate products and do service work for customers. Prefer man who has had experience as foreman finisher with reliable furniture manufacturer. Correspondence will be considered confidential. Address IF-626, care Industrial Finishing.

THE ALEXANDER MILBURN CO.
Paint Spray Equipment, Standardized Cutting and Welding Apparatus and Portable Carbide Lamps. Write for Catalog.
1406 W. Baltimore st., Baltimore, Md.

FOR REAL SAVINGS ON PAINT SPRAYING EQUIPMENT

Trade in your out-of-date spray guns, fans, booths, compressors, sanders, rubbing machines, etc., on new or rebuilt equipment. As the largest dealer in rebuilt equipment we are able to offer liberal allowances on your old equipment. Every item guaranteed.

We have in stock:

Air Compressors (large and small)
Air and Material hose and connections.
Spray guns (rebuilt) all standard makes.
Pressure tanks.
Spray booths and other specialties.
Rubbing Machines (air or electric)

Distributors of entire Binks line. Write us today . . . we have it and can save you money.

M. & E. MANUFACTURING CO.
720 S. Meridian St., Indianapolis, Ind.
Est. 1913

THESE TWO UNITS WILL

Boost Your Production

They Offer You Greater Adaptability . . Greater Speed . . Longer Life

The BU multiple head airbrush shown here is built to handle every kind of coating material hot or cold, coarse or fine and of every consistency from water to asphalt.

No airbrush made equals it in flexibility and long wear. Its foolproof construction makes it almost impossible to get out of order.

The airrubbing machine is typical of the complete Paasche polishing line. It will last for years producing a better finished surface and accomplish the desired results faster than hand rubbing. Paasche airrubbing machines may be used with wet and dry sandpaper, pumice, emery paper, felt or any other abrasive or polishing materials on every product from rough castings to Carrara marble.

● *Ask us to send you bulletins describing the Paasche manual and automatic air-equipment used in your industry.*

Paasche Airbrush Co.

1917 DIVERSEY PARKWAY . . . CHICAGO, ILL.

14 FEET LONG
10 SHELVES HIGH
6 ROWS DEEP

—and both sides of the room!

THIS photograph shows only a part of our reference store room, where an actual production sample of every job is kept on file for several months. Thousands of individual, made-to-order finishes are developed in our laboratory in the course of a single year.

Many of these formulas may vary only slightly from each other—but the point is that the slight difference was all-important to the manufacturer concerned. ZAPON specializes in finding the *exactly* right finish for every product—one that will stand up under every condition.

Our research laboratories in either Stamford, Conn. or North Chicago, Ill. will be glad to cooperate with your own staff to develop a finish which will fill your individual requirements.

IT'S THE **FINISH** THAT COUNTS

ZAPON

Eastern Sales:
ZAPON DIVISION
Atlas Powder Company
Stamford, Conn.

Western Sales:
ZAPON-BREVOLITE DIVISION
Atlas Powder Company
North Chicago, Ill.

LACQUERS
BREVOLITE
ENAMELS
VALUES THAT ENDURE

INDUSTRIAL FINISHES